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ABSTRACT

This document is a collection of 12 issues of a monthly report on public policy and programs affecting postsecondary educational opportunity. Each issues contains two or three research articles analyzing postsecondary education trends. Titles of articles include: "Religious Preferences, Activities and Demographics of American College Freshmen"; "FY1997 State Budget Actions"; "Educational Attainment of Young Adults, 1940-1995"; "The Southern Perspective on Financing Opportunity for Higher Education"; "Trends and Patterns in Mathematics Achievement of Students in K-12 Education, 1973-1996"; "Institutional Graduation Rates by Pre-college Characteristics of Students"; "Public University Tuition and Fee Increases Moderating in 1990s, but Still Exceed Inflation"; "Actual versus Predicted Institutional Graduation Rates for 1100 Colleges and Universities"; "Earnings for Individuals by Educational Attainment, 1975 to 1994"; "Are We Moving Toward Two Classes of Opportunity?"; "High School Dropout Rates by Gender and Race/Ethnicity, 1967 to 1995"; "Freshman-to-Sophomore Persistence Rates, 1983 to 1997"; "Private Correlates of Educational Attainment"; "Transition from College to Work"; "College Continuation Rates for Recent High School Graduates Reached Record High in 1996"; "Employment and Unemployment Rates by Educational Attainment, 1970 to 1996"; "5-Year Institutional Graduation Rates by Degree Level, Control and Academic Selectivity, 1983 to 1997"; "State Appropriations for Higher Education Increase Again for FY1998"; "An Indentured Generation of Students? A Critical Examination of Student Debt Load"; "High School Graduation, College Continuation and Chance for College by Family Income, 1995"; "Family Income by Educational Attainment, 1959 to 1996"; "Decline in State Tax Fund Appropriations for Higher Education Paused in FY1998"; "Academic Preparation for College, 1983 to 1997"; and "Education and Training Requirements for Job Openings between 1996 and 2006". (SW)

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Postsecondary Education
OPPORTUNITY

The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

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Postsecondary Education
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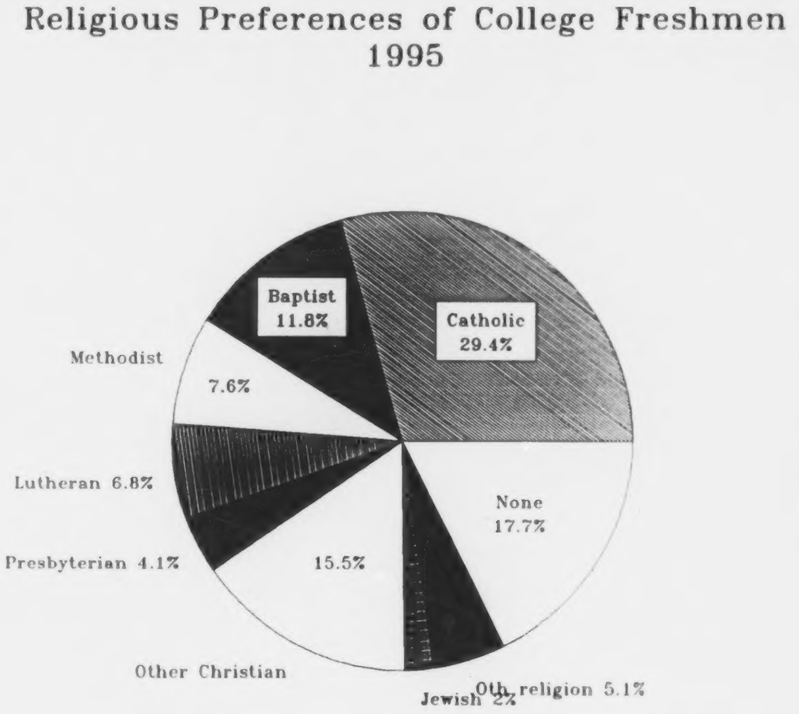
The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 55 **Iowa City, Iowa** **January 1997**

Anchors of life . . . . . . adrift?

Religious Preferences, Activities and Demographics of American College Freshmen



Religion plays important roles in the lives of most American college freshmen:

- *More than 4 out of 5 college freshmen cite a religious preference.*
- *More than three-quarters of college freshmen attended a religious service during the previous year.*
- *More than one-in-five freshmen report discussing religion frequently.*
- *About a quarter of college freshmen identify themselves as born-again Christians.*

Moreover, nearly all private higher education institutions attribute their creation to religious bodies. Often these colleges and universities retain their religious affiliations and identities in their funding, governance, and distinction in enrollment marketing activities.

- *Among born-again Christian freshmen, 60 percent reported that the religious affiliation of their college was a very important factor in their choice of institution.*
- *Among college freshmen who attend religious services frequently, more than 80 percent said that the religious affiliation/orientation of their college was a very important factor in college choice.*

However, our analyses indicate that change is afoot:

- *Over the last three decades, the proportion of American college freshmen reporting no religious preference has more than doubled, from 7 percent in 1966 to 15 percent by 1995.*
- *The proportion of college freshmen that report discussing religion frequently has declined from 33 percent in 1967 to 19 percent by 1994.*
- *The proportion of college freshmen that report attending religious services frequently or occasionally has declined from 91 percent in 1968 to 81 percent by 1995.*

Moreover, there has been a shift over the last 30 years in religious preferences among college freshmen. Sharp declines in the proportion of freshmen who identify themselves as Methodists, Presbyterians and Jewish have been partially offset by increases in the proportions of freshmen who identify themselves with other Christian groups and other non-Christian religions.

This analysis is prompted by direct

and indirect interests in the religious characteristics of college freshmen. The direct interests are that religion is important to most college freshmen and to the environments of many--mainly private--college and university campuses. Many college freshmen seek, and many private colleges and universities provide, a religious dimension to the academic experience of college life.

Our indirect interest is related to the broad phenomenon of engagement of college students with social institutions, or more accurately the disengagement of college students with traditional social institutions. Research on the experience of students in colleges has shown that success--measured by persistence and achievement--is directly related to academic and social integration of students with the life of the college community. Yet college students, like society as a whole, have been disengaging from traditional, historically-rooted social institutions of society for many years. This disengagement has political, civic, religious, and other dimensions. It also has academic aspects that have been reported in past issues of **OPPORTUNITY** and will continue to be reported in future issues.

This analysis focuses on describing the religious preferences, activities and demographics of American college freshmen over the last three decades. The report that follows summarizes a small fraction of our findings from the data provided for study. This report should be considered merely an introduction to efforts to understand the profound influence of religious beliefs on the lives of college students.

The Data

The data used in this study were collected as a part of the annual survey of American college freshmen conducted by UCLA.

Sax, L.J., Astin, A.W., Korn, W.S., and Mahoney, K.M. (1995). *The American Freshman: National Norms for Fall 1995.* Los Angeles: Higher Education Research Institute, UCLA.

In addition to the published data for 1995, we tapped additional related resources. Data on the religious preferences, activities and demographics of college freshmen were taken from prior year survey publications including summary publications of the UCLA freshman survey.

Dey, E.L., Astin, A.W., and Korn, W.S. (1991). *The American Freshman: Twenty-Five Year Trends, 1966-1990.* Los Angeles: Higher Education Research Institute, UCLA.

Special tabulations of the 1995 freshman file were prepared for our study by Sarah Parrott of the Higher Education Research Institute at UCLA.

Note that these data describe the national population of first-time, full-time freshmen entering America's public and private 2-year and 4-year colleges and universities.

Religious Preference

The chart on the first page of this issue of **OPPORTUNITY** describes the distribution of college freshmen in the fall of 1995. The largest group--at 29 percent--are students who identified themselves as Roman Catholics. Other Christian groups--Protestants--comprise 48 percent of the total. The balance identify themselves as Jewish (1.8 percent), other religions (including Buddhist and Islamic, at 5.0 percent), and none (15.0 percent). Christians thus comprise over three-quarters of all college freshmen.

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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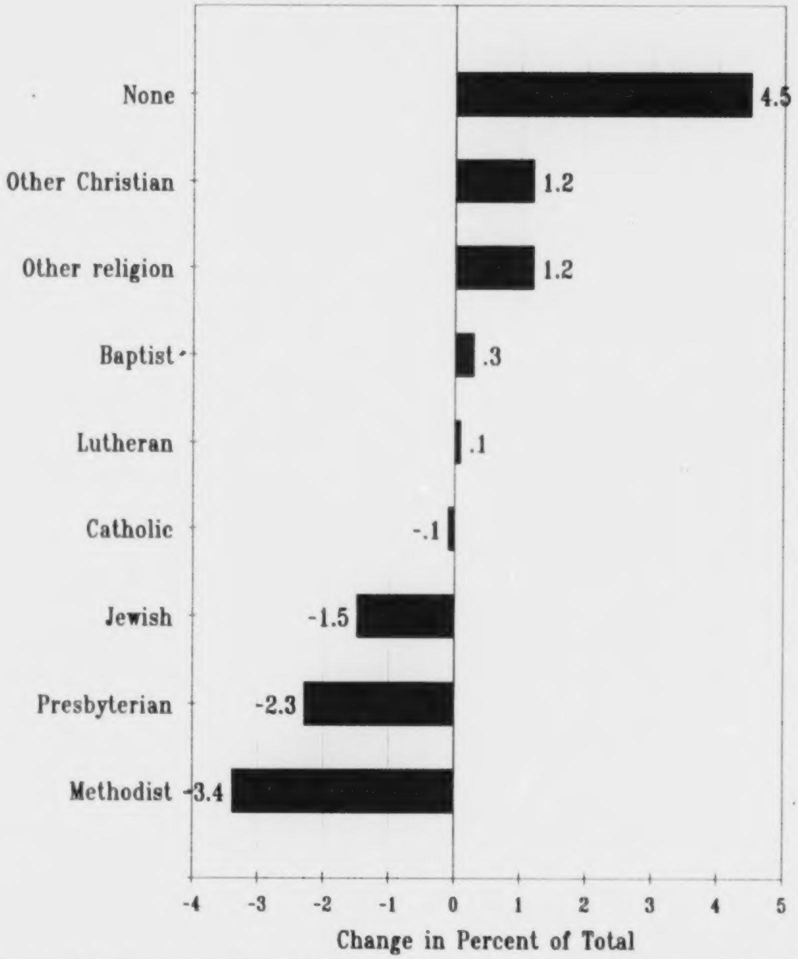
Change in Religious Preferences of Freshmen
1969 to 1995



Over the last three decades, the religious preferences of college freshmen have shown relatively small but significant changes. As shown in the chart on this page, between 1969 and 1975 the proportion of freshmen citing "none" as their religious preference increased by 4.5 percent, from 13.2 to 17.7 percent. Other gains in the share of the total were shown for other Christians and other religions.

The largest losses between 1969 and 1995 were for Methodists (from 11.0 to 7.6 percent), Presbyterians (from 6.4 to 4.1 percent) and Jewish (from 3.5 to 2.0 percent). The shares for Baptists, Lutherans and Roman Catholics held about constant over this period.

The freshman survey through which these data are gathered each year has posed the question of religious preference in a variety of ways, and these differences have produced interesting variations in the responses of college freshmen. In some years a short list was used: Roman Catholic, Jewish, Protestant, other religion and none. In most years a longer list of 17 to 18 religious preferences was used. (Summaries of our analyses use nine categories in this report.)

In those years when the short list was used, apparently many students with Protestant preferences identified themselves instead with other religions. Apparently many non-Catholic Christians do not associate their religions with the Protestant faiths. Anomalies in survey design suggest that this group may be primarily Episcopalian and/or Presbyterian.

Since 1988 the UCLA freshman survey has asked students if they were born-again Christians. In the 1995 survey, 26.6 percent of the freshmen indicated that they were. Over the last eight years when this question has been asked, the proportion giving a yes answer first rose, from 22.7 percent in 1988 to a peak of 31.7 percent in 1992. The proportion has declined erratically since then.

Freshmen who identify themselves as born-again Christians are far more likely to be found on some campuses than on others. As shown in the chart on the following page, in 1995 about half of all freshmen at public and private black 4-year colleges and at Protestant 4-year colleges reported that they were born-again Christians. This compares to about 12 percent in Catholic 4-year colleges and about 14 percent at private universities.

Religious Activities

Data on attendance at religious services has been collected in the freshman survey for most years since 1968. As shown in the chart, attendance has been gradually declining since 1968, from 91 percent to 81 percent by 1995. The first year the data were collected was the high point, and the most recent year the low point in this series.

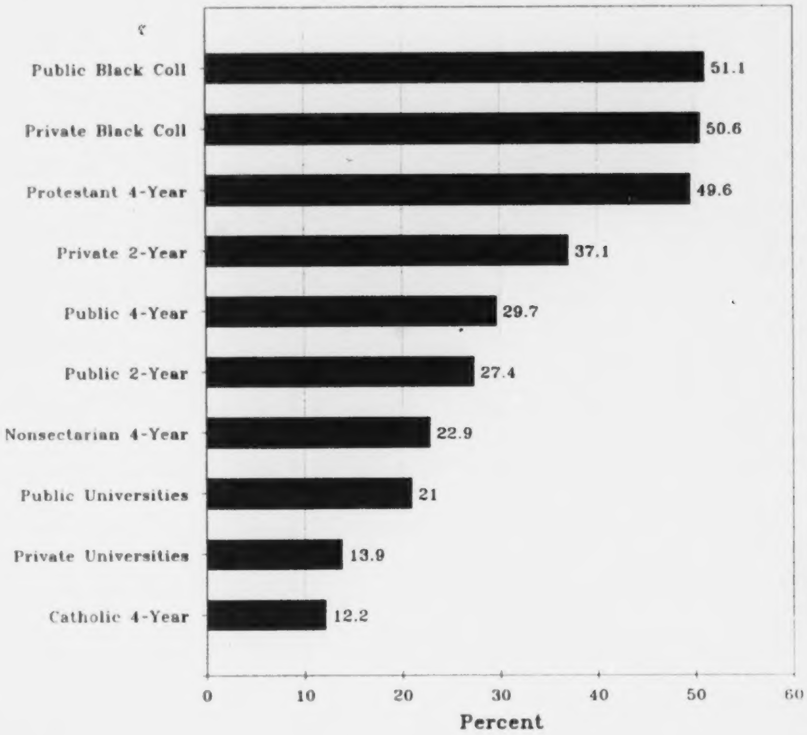
Religious service attendance in 1995 ranged from a low of 71.8 percent among public 2-year college freshmen, to 92.8 percent among freshmen enrolled at private black colleges.

In 1994 the proportion of freshmen who reported that they frequently discussed religion was 21.1 percent. This was down from 33.4 percent in 1967, the first year the question was asked in the freshmen survey. Across institutional types, the proportion of college freshmen reporting that they frequently discussed religion ranged from 12.4 percent in public 2-year colleges, to 29.9 percent in Protestant and private black 4-year colleges.

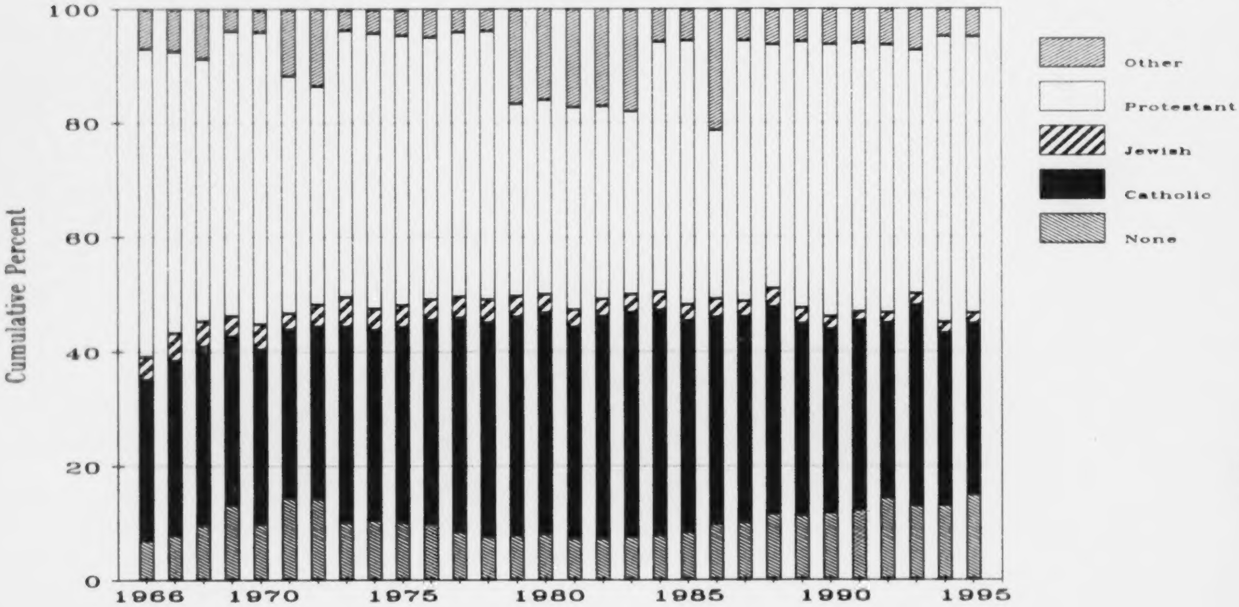
Religious Plans

Between 1966 and 1995 the proportion of college freshmen reporting that they planned a career as a minister/priest or other clergy declined from 1.0 percent in 1966 to 0.3 percent by 1995. In 1995 the proportion of freshmen planning a career in the clergy ranged from 0 in public black colleges to 2.0 percent in Protestant 4-year colleges.

Born-Again Christians by Institutional Type and Control
1995



Religious Preference of College Freshmen
1966 to 1995



One question asked in the freshman survey that does not explicitly address the religious plans of college freshmen, but may be closely related, asks freshmen about the importance of developing a meaningful philosophy of life. The proportion of freshmen reporting that this was an essential or very important objective has declined from 83 percent in 1967, when the question was first asked, to a low of about 39 percent in 1987. By 1995 this had recovered slightly to about 41 percent, with a range from 34 percent of freshmen in public 2-year colleges to nearly 59 percent of freshmen in private black 4-year colleges.

Religious Preference Demographics

College freshmen vary not only in their religious preferences and activities over time and between different types of institutions, but the demographic characteristics of freshmen vary with respect to preferences and activities. Some of these student characteristics are obvious, e.g. Hispanics are more likely to be Roman Catholic than other racial/ethnic groups. Other characteristics are more subtle or obscure, but no less dramatic when revealed. Here we explore a very few of the more important and/or interesting relationships between religious preference and activities with student characteristics, especially demographic characteristics.

Preference by race/ethnicity. Here we group the religious faiths into five major aggregates: Jewish, Catholic, Protestant, other religion and none. The distribution of freshmen in each racial/ethnic group by these five faith groups is shown in the chart on the following page.

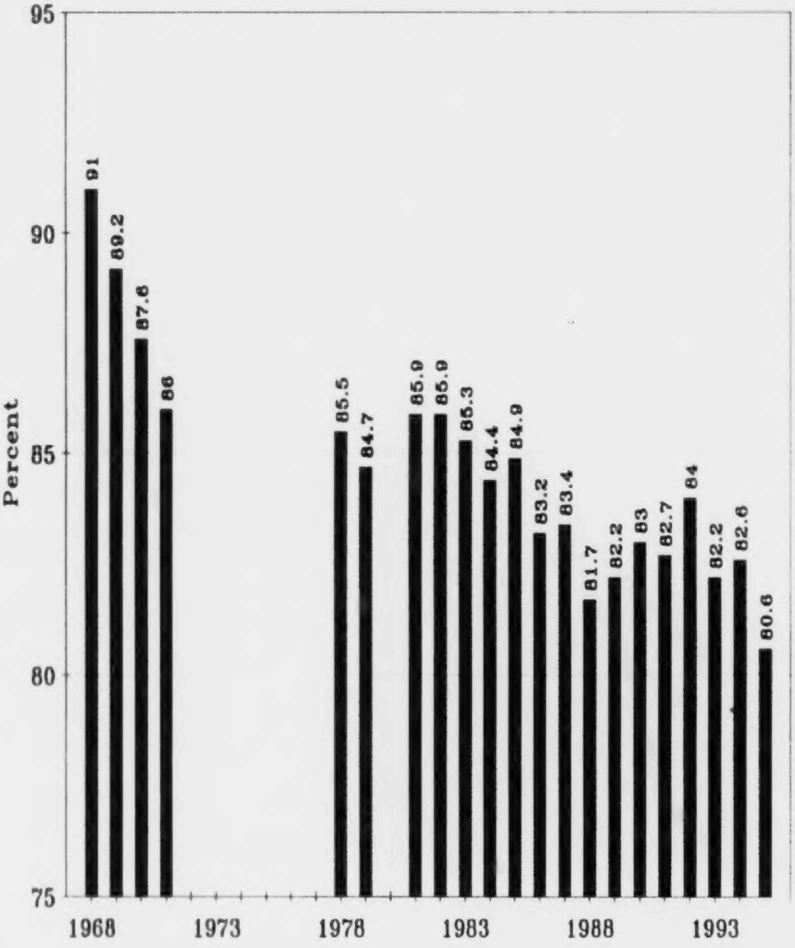
Among whites, about 48 percent are Protestants, 32 Catholic, 15 percent none, 3 percent other religions, and 2 percent Jewish. Within these totals, white Protestants are primarily Baptists (10.3%), other Christian (10.2%), Methodist (9.4%), Lutheran (8.5%) and Presbyterian (4.5%).

In contrast, nearly 76 percent of Black freshmen are Protestants, with 11 percent reporting none, 7 percent reporting other religion, and 6 percent reporting Catholic. The breakdown of black Protestants is Baptist (52.1%), other Christian (11.2%) and Methodist (6.7%).

Hispanics, including Chicanos, Puerto Rican and other Latinos, report being about 59 percent Catholic, 22 percent Protestant, 13 percent none, and 5 percent other religions. Asians and those of other race report nearly equal preference as Catholic, Protestant, other religion and none. American Indians report 55 percent Protestant (mainly Baptist and other Christian), 19 percent Catholic, 19 percent none and 7 percent other religions.

Preference by parental income. Median parental income for all 1995 freshmen was $49,168. Freshmen reporting the highest parental incomes were those whose religious preference was Jewish ($95,522), Episcopal

Attended Religious Service in Last Year
1968 to 1995



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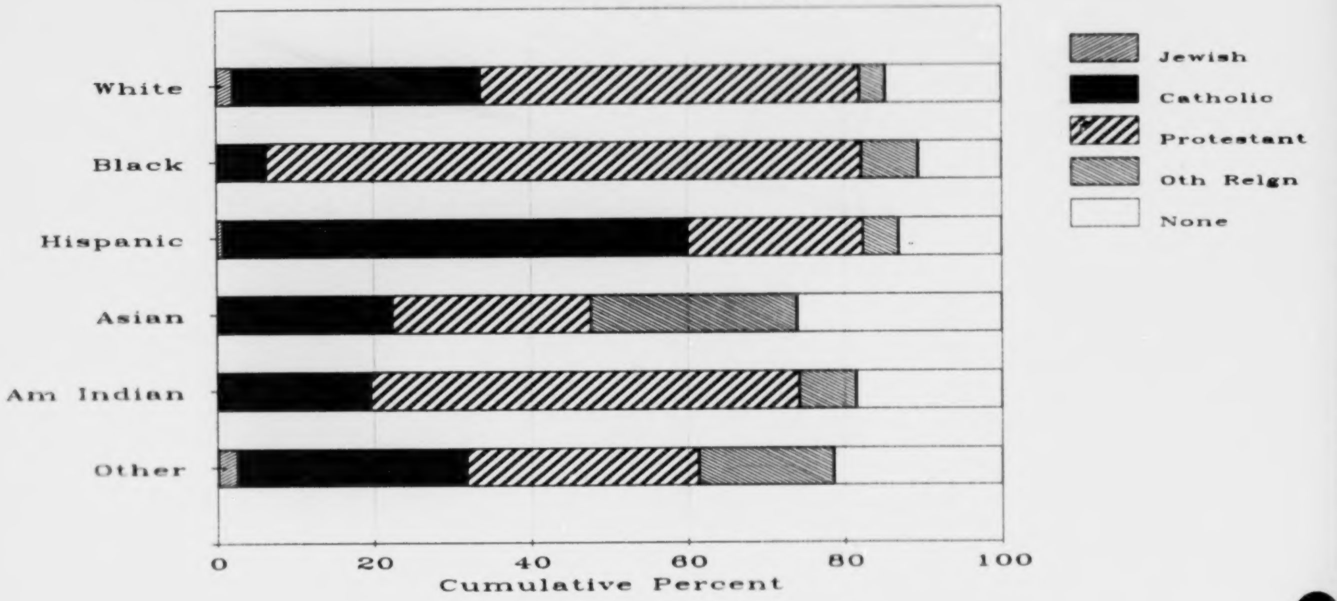
Religious Preferences by Racial/Ethnic Groups
1995

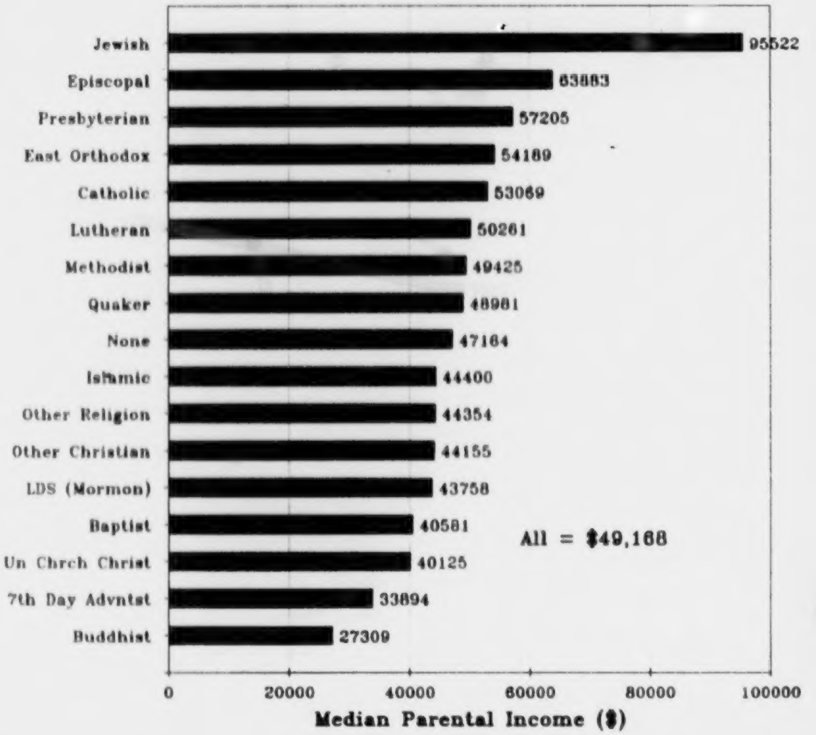


($63,883), Presbyterian ($57,205), Eastern Orthodox ($54,189) and Catholic ($53,069). Those reporting lowest parental incomes were Buddhist ($27,309), Seventh Day Adventist ($33,894), United Church of Christ ($40,125) and Baptist ($40,581). These data are shown on the chart.

Preference by fathers education. American college freshmen come from a wide range of parental educational backgrounds, and this diversity is reflected in the educational attainment of fathers of college freshmen from different religious faiths. In 1995 42.6 percent of college freshmen reported that their fathers were college graduates. This compares to about 27 percent for all males in the population between the ages to 45 to 49 years.

Across the different religious preference categories of the UCLA freshman survey, the range in the percent of fathers with college degrees (4 year or more) ranged from 31 percent among Baptists to 81 percent among Jews.

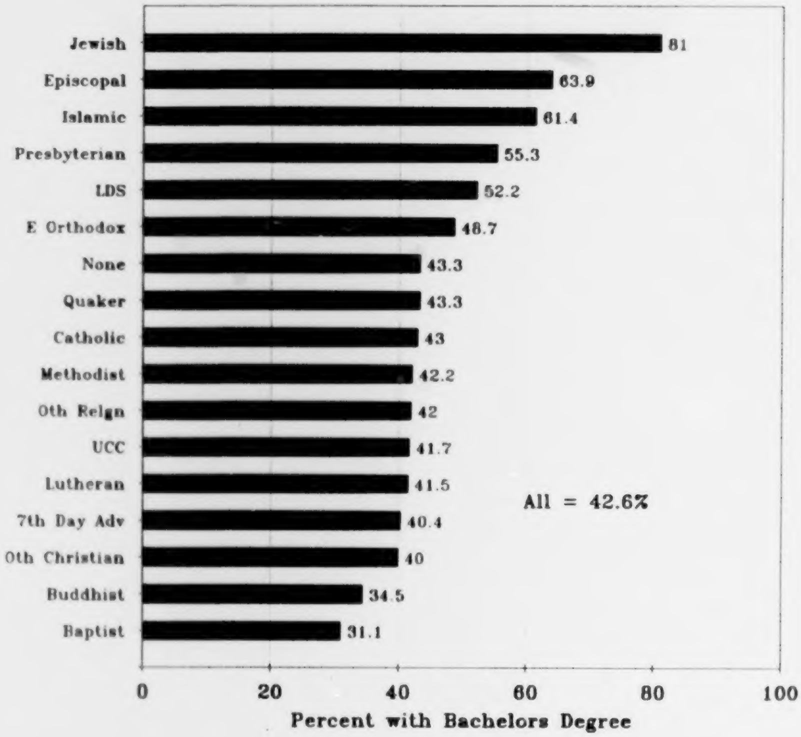
Median Parental Income by Student's Religious Preference
1995



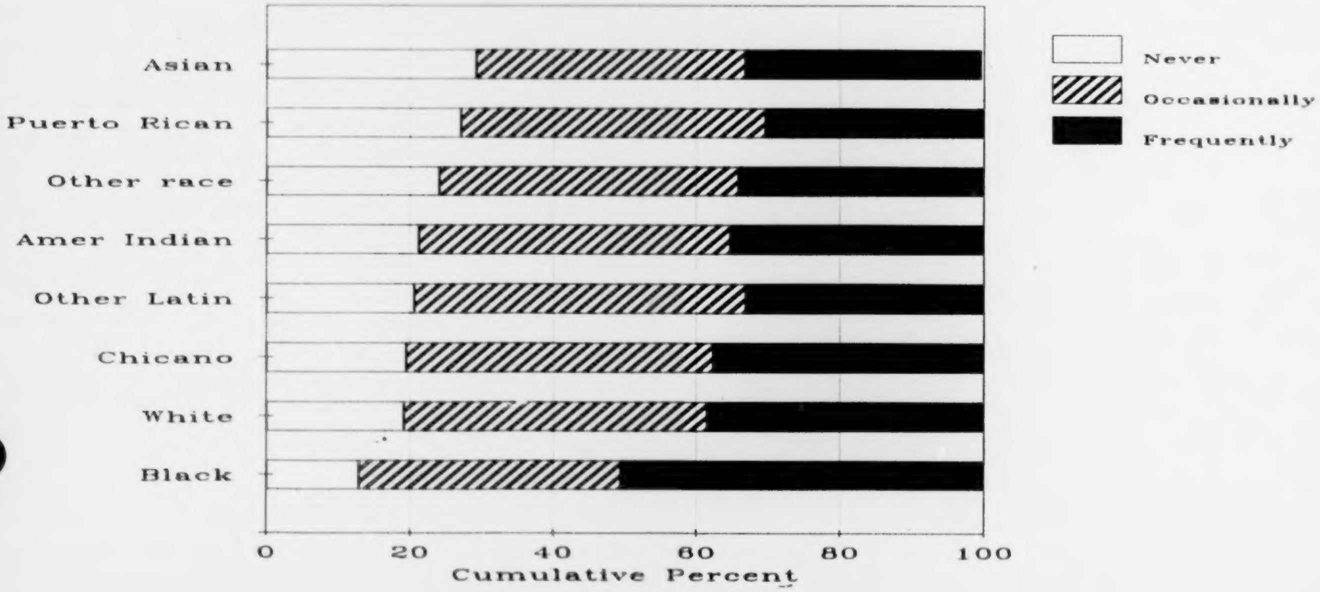
The chart illustrating this relationship is on this page, and the rank order has the expected parallel in the parental income chart on the previous page. As all our data show, family income and educational attainment of parents are highly correlated.

Preference by institutional religious affiliation. We have examined the relationship between religious preference of college freshmen and the importance of the religious affiliation/orientation of the institution where they chose to enroll. Surprisingly, across all religious groups, the institution's religious affiliation was relatively unimportant to the college selection process. Among Catholics, for example, just 8 percent of all freshmen indicated that this was a very important factor in college choice. The institution's religious affiliation was most important to Eastern Orthodox (16%), Episcopalians (15%), Seventh Day Adventists (14%), Methodists (13%) and Lutherans (12%), and least important to other Christians (1%),

Fathers with College Degree by Religious Preference 1995



Freshman Attendance at Religious Services by Race/Ethnicity, 1995



United Church of Christ (3%), Baptists (4%), and LDS (Mormons) (5%). Across all religious faiths, freshmen reported that the academic reputation of the institution and job placement success of graduates was most important in their college selection decision.

Religious Activities Demographics

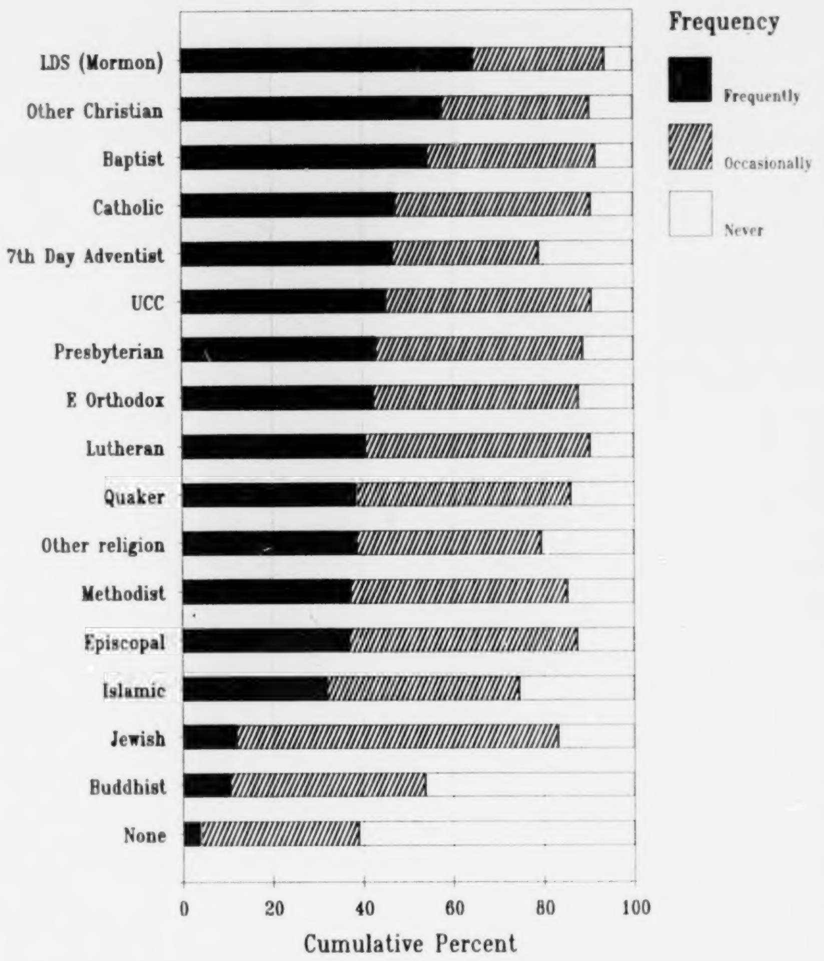
Service attendance by preference. The most basic of religious activities is attendance at religious services. Here we examined attendance by race/ ethnicity and other demographic characteristics of college freshmen.

College freshmen with religious preferences attend religious services at widely ranging rates as shown in the chart on this page. In 1995 freshmen who gave their religious preference as Latter-Day-Saints (Mormons) attended religious services frequently at the highest rate--64.6 percent--and never attended religious services at the lowest rate--6.3 percent--of any religious group. More than 50 percent of those who identified themselves as other Christian and Baptist also reported that they attended religious services frequently.

At the other extreme, those who reported their religious affiliation as none were least likely to attend religious services at all. While this finding is not surprising, freshmen who identified themselves as Jewish or Buddhist were least likely to attend religious services frequently.

Activities by race/ethnicity. As shown in the chart on the previous page, in 1995 blacks were most likely to attend religious services frequently (and least likely to attend not at all). About 51 percent reported that they had attended frequently during the last year, compared to 38 percent for whites and Chicanos. Puerto Ricans were least likely to report that they attended services frequently at 30 percent.

Attendance at Religious Services by Religious Preference
1995



Asians were most likely to report that they had not attended religious services during the previous year at 29 percent, followed by Puerto Ricans at 27 percent.

Activities by parental income. Religious service attendance varied somewhat by parental income among 1995 college freshmen. Generally the proportion of college freshmen reporting that they attended religious services frequently rose with income, from 26 percent of those from families with incomes of less than $6000, to a peak of 43 percent for those whose parental income was $60,000 to $75,000, then dropped off to 37 percent of those whose parental income was greater than $200,000.

Activities by father's education. Attendance at religious services varied somewhat by level of father's educational attainment. The proportion of college freshmen reporting that they attended services frequently rose from about 31 percent of those whose father had some high school, to a peak of 46 percent where the father had some graduate school education. The proportion reporting that they never attended religious services was greatest at 29 percent among those whose fathers had some high school education and least at 14 percent among those whose fathers has some graduate education.

Activities by high school grades. Frequency of attendance at religious services was also related to average high school grades among 1995 college freshmen. Those with high school grades averaging C were least likely to attend services frequently, at about 27 percent. Freshmen with the highest high school grade averages--A or A+--were most likely to attend religious services frequently, at 54 percent.

College choice. Across many factors that influence college choice, frequency of religious service appears to play no special role--with one important exception. College freshmen who report that they attend religious services frequently cite the religious affiliation or orientation of the college where they enrolled as very important to their institutional choice 81 percent of the time. Similarly, freshmen who report that they never attend religious services nearly always (92%) report that the religious affiliation of the institution was not important to their choice decision.

Similarly, the importance of the religious affiliation of the college attended was very important to born-again Christians. Among 1995 college freshmen, 61 percent of born-again Christians reported that the religious affiliation of the college was very important to their college choice, compared to 39 percent of those who reported that they were not born-again Christians. Among those who were not born-again Christians, 86 percent said that religious affiliation was not important to their choice of the college or university where they were enrolled.

Conclusions

Religion plays a large role in the lives of most American college freshmen. In 1995 82.3 percent of all college freshmen cited a religious preference. However, this is down from 91.2 percent in 1966. This proportion has ebbed and flowed over the last 30 years, with the proportion of freshmen citing a religious preference declining from 1966 to 1971, then increasing to 1982, and then decreasing through 1995 to the lowest proportion in the last three decades.

The religious preferences of college freshmen have also shifted markedly. Substantial declines have been occurred among Methodists, Presbyterians and Jews, with growth concentrated among other Christian and other religious groups.

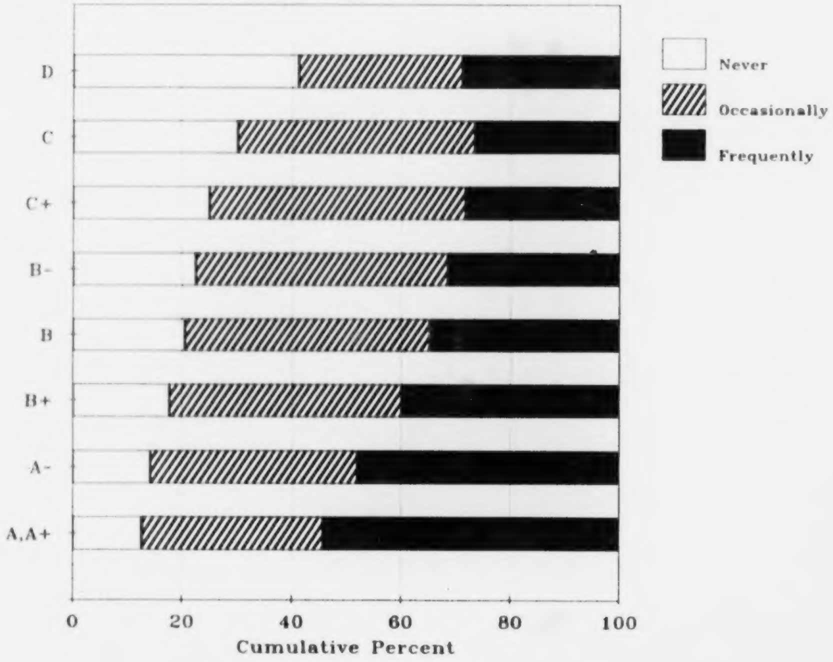
Decline in attendance at religious services has accompanied the decline in religious affiliation. In 1968 91 percent of freshmen reported that they attended a religious service in the last year. By 1995 this had declined to 80.6 percent.

Religious commitment is related to specifically academic issues in a variety of ways:

- High school grades are closely related to frequency of attendance at religious services, but not to religious preference.
- College choice is also closely related to frequency of attendance at religious services. Freshmen who attend services frequently give greater weight to the religious affiliation of the college than do those who attend services less frequently.
- Similarly, the religious affiliation of the college is especially important to born-gain Christians.

Despite some waning of influence, religious commitment remains a major force in the lives of most college freshmen in 1995.

Freshman Attendance at Religious Services
by High School Grades, 1995



FY1997 State Budget Actions

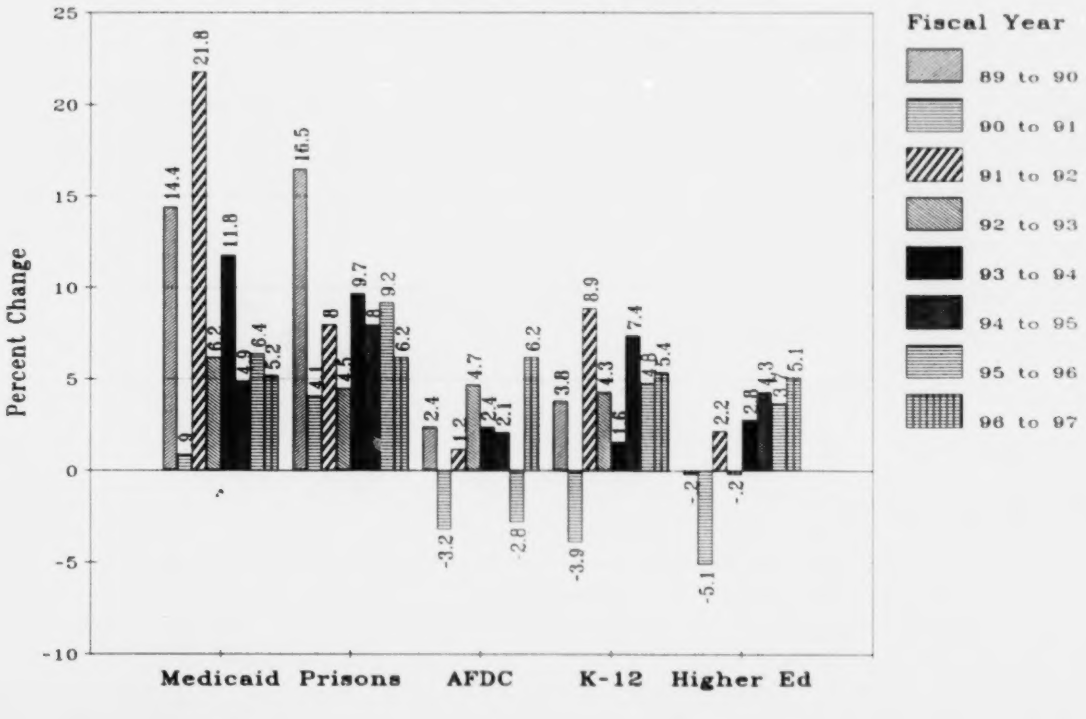
The National Conference of State Legislatures (NCSL) recently released its annual report on state appropriations for FY1997. This report is especially valuable for the study of shifting state budget priorities in the competition for limited state dollars. At the state level, higher education is in direct competition for funding with K-12 education, corrections, AFDC, Medicaid, and other state spending priorities. Also, state budget priorities now often include state tax cuts.

Compared to every other year of the 1990s to date, higher education generally fared somewhat better in the state appropriations process.

- *FY1997 appropriations for higher education were up by 5.1 percent over FY1996 expenditures. This was the largest percentage increase for higher education in the 1990s.*
- *Of course, not all states fared equally well. At one extreme higher education in* ***Oklahoma*** *had a 12.4 percent increase, while in* ***Wisconsin*** *higher education had a 2.2 percent decrease in funding.*
- *Higher education's increase of 5.1 percent was below those for corrections (6.2 percent), K-12 education (5.4 percent) and Medicaid (5.2 percent), but above that for Aid for Families with Dependent Children (AFDC) which was reduced by 6.2 percent.*

Until recently, higher education had been losing budget share mainly to corrections and Medicaid in state budget priorities. However, recently published data from the National Association of State Budget Officers (NASBO) points to a new competitor in state budget priorities: tax cuts. Although Americans are among the least taxed citizens in the industrial world, and face unmatched social problems that are usually addressed in other countries with government funding, state governments have deemed reducing state taxes and the programs they finance a more pressing priority than meeting the challenge from the labor market to broaden opportunities for postsecondary education and training for their citizens.

Here we update our preliminary report from the July OPPORTUNITY on



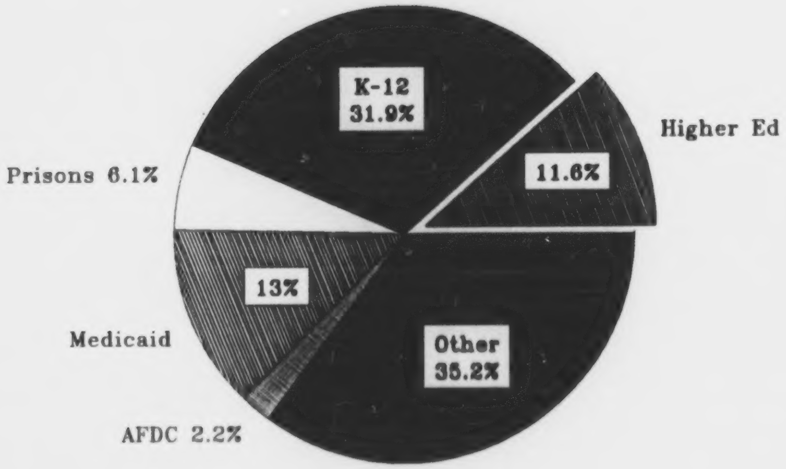
Annual Changes in Major Expenditure Categories
from State General Funds
FY1990 to FY1997

Percent Change in State Own-Source Appropriations for Major Program Categories FY1996 Expenditures to FY1997 Appropriations

State	Higher Education	K-12 Education	Corrections	AFDC	Medicaid	General Fund Revenues	General Fund Approps
Oklahoma	12.4%	5.9%	17.2%	-14.0%	5.7%	2.5%	7.4%
Florida	11.4	7.7	9.0	-8.6	7.6	5.8	5.2
Indiana	10.0	6.9	0.8	10.8	5.7	4.0	8.6
Virginia	8.9	10.1	12.2	-14.6	6.0	7.9	5.7
Louisiana	8.9	5.1	9.5	-5.7	-39.8	5.8	2.5
Missouri	8.7	9.5	19.0	-1.6	7.2	5.9	9.5
Oregon	8.3	1.6	21.9	-8.5	-1.9	6.8	4.1
North Carolina	7.8	8.7	8.2	1.7	11.0	3.1	9.5
California	7.8	8.4	8.1	-8.4	4.5	3.3	4.0
Utah	7.7	12.8	10.5	-13.9	2.5	5.5	15.3
Georgia	7.1	8.8	-1.0	-1.1	-2.1	4.9	3.9
Massachusetts	6.5	12.6	7.2	-9.2	1.3	0.2	4.7
Colorado	6.4	7.3	5.9	-5.4	11.5	4.2	6.4
Nevada	6.3	14.6	7.0	8.1	13.5	5.1	6.9
Rhode Island	6.1	2.2	0.6	-4.6	3.0	-0.5	1.1
Ohio	5.6	6.4	13.4	-3.6	31.4	-0.1	10.1
Wyoming	5.6	8.0	15.8	6.2	11.5	3.1	-1.0
New York	5.5	2.9	-0.5	-2.9	0.5	1.2	2.0
Illinois	5.5	6.9	10.7	5.3	0.5	2.9	4.9
Kentucky	4.8	2.8	8.4	-16.3	9.4	3.9	1.0
Michigan	4.8	2.2	3.7	-15.6	33.6	-2.5	-1.7
Washington	4.7	4.1	2.6	0.4	4.7	4.3	3.3
South Carolina	4.6	6.3	15.0	0.0	4.5	4.3	4.5
Connecticut	4.6	1.2	4.9	-4.5	-2.2	-0.7	2.1
New Mexico	4.5	2.6	-0.2	-2.5	12.1	7.4	3.6
New Jersey	4.2	1.1	-1.1	-30.5	5.7	0.3	1.9
Nebraska	4.1	4.5	2.5	1.0	5.5	5.3	4.8
North Dakota	4.1	4.1	3.5	-10.3	6.1	4.1	4.1
West Virginia	4.1	0.0	5.7	1.4	-8.1	2.6	0.7
Tennessee	4.0	7.1	0.9	-59.7	-1.6	5.5	5.0
Montana	3.7	0.2	2.5	14.5	8.9	1.9	-0.5
Maryland	3.5	2.8	-0.1	-1.3	5.5	2.9	0.2
Idaho	3.1	3.1	1.7	2.6	16.0	6.1	5.4
Arizona	3.0	3.0	11.1	1.3	1.4	-0.6	4.7
Minnesota	2.3	-1.7	0.2	1.5	11.0	-0.2	1.3
Maine	2.0	3.0	1.4	-6.4	5.8	2.7	3.7
Iowa	1.8	12.2	8.6	6.1	4.2	5.9	7.7
Arkansas	1.7	6.2	10.8	-0.6	7.6	4.3	3.7
Hawaii	1.5	1.1	2.6	3.5	0.5	2.6	-0.7
Alabama	0.7	6.3	1.1	-23.0	12.3	3.9	4.4
Pennsylvania	0.7	-0.1	12.4	2.8	-5.3	1.8	1.2
Delaware	0.4	6.3	7.9	2.9	10.1	4.1	1.5
South Dakota	0.4	15.3	8.5	-2.6	7.7	6.1	3.5
Vermont	0.2	1.2	4.6	-1.0	16.0	1.0	2.7
New Hampshire	-0.1	1.1	2.7	-10.0	0.7	4.7	2.6
Texas	-0.2	-1.5	5.1	-3.4	6.5	4.0	1.6
Kansas	-0.2	0.9	4.5	-3.7	4.4	2.9	1.8
Alaska	-0.4	0.4	-1.7	0.9	1.7	-7.4	-3.4
Mississippi	-1.3	-0.7	4.4	-18.7	14.7	3.8	2.3
Wisconsin	-2.2	31.4	4.7	-11.7	5.0	6.0	10.5
Average	**5.1%**	**5.4%**	**6.2%**	**-6.2%**	**5.2%**	**2.8%**	**3.9%**
Median	**4.4%**	**4.8%**	**5.0%**	**-2.8%**	**5.7%**		

Source: National Conference of State Legislatures, *State Budget Actions 1996*, November 1996.

General Fund Appropriations Shares FY1997



FY1997 state appropriations. This report not only details that preliminary report, but also adds insights into analyses of state funding of higher education reported in the November and December issues of OPPORTUNITY based on survey data reported by Illinois State University in *The Chronicle of Higher Education* and the Bureau of Economic Analysis in the National Income and Product Accounts.

The Data

The primary data source used in this analysis is based on the annual survey of members of the National Association of Legislative Fiscal Officers (NALFO) conducted by the fiscal affairs program staff of the National Conference of State Legislatures during the summer of 1996.

Snell, R. K., and Perez, A. (1996.) *State Budget Actions 1996.* Denver, CO: National Conference of State Legislatures.

State expenditures and appropriations data are provided for each of the 50 states. This year Washington, DC, and Puerto Rico did not participate in the survey.

State appropriations data include both state general fund *expenditures* for FY1996 (1995-96 academic year) and *appropriations* for FY1997 (1996-97 academic year) plus special "earmarked" funds that have been dedicated to specific budgetary purposes, e.g. education. State general fund budgets cover about half of total state budgets. This is the fund to which most state tax receipts (e.g., from income and sales taxes) are deposited, and is the fund over which lawmakers have the most control. Revenues to the state general fund are also an indicator of economic conditions in the states.

Several special notes are required for interpreting higher education data. First, tuition revenues are appropriated in some states and not in others. Second, capital appropriations are not included in these tabulations. Third, in about half the states local governments also contribute to the funding of higher education, notably community colleges with local property tax revenues.

In addition we cite data recently published by the National Association of State Budget Officers (NASBO) to illustrate the emerging state budget priority of enacted tax reduction against which higher education funding competes.

National Association of State Budget Officers. (1996). *The Fiscal Survey of States.* Washington, DC: National Governors' Association.

FY1996 Expenditures and FY1997 Appropriations

During FY1996 the 50 states spent $40,986.1 million from general funds, and $3,536.9 million in earmarked funds for higher education. This compares to $42,162.0 appropriated from general fund expenditures for higher education for FY1996, and $2,854.6 from earmarked funds for higher education in 1995 state budget actions. (Note that Hawaii did not report data for the 1995 report.)

Earmarked funds comprise less than 8 percent of state appropriations for higher education. They are provided in 24 of the 50 states for FY1997. However, in some states funds designated for higher education comprise a significant portion of higher education funding. For 1997 100 percent of state appropriations for higher education in **Alabama** were earmarked. Other states where significant portions of state funds are designated for higher education include **Tennessee** (88%), **Wyoming** (44%) and **Hawaii** (35%). Most of the states that practice earmarked funding for higher education are located in the Southeast, Rocky Mountains and Far West regions.

Because this budget practice is not likely to affect total state appropriations for higher education, henceforth in this analysis total state appropriations--called "own-source"--for higher education will be reported.

For FY1997 the 50 states appropriated $46,795.4 million for higher education. For FY1996 states spent $44,523.0 million for higher education. The FY1997 appropriation was 5.1 percent above FY1996 expenditures. The FY1997 increase of 5.1 percent follows a 3.7 percent increase in FY1996, 4.3 percent increase in FY1995, 2.8 percent increase in FY1994. For three of the four years prior to FY1994, higher education appropriations actually decreased compared to the prior year expenditures. From this perspective, FY1997 appropriations stand out as the best of any year in the 1990s.

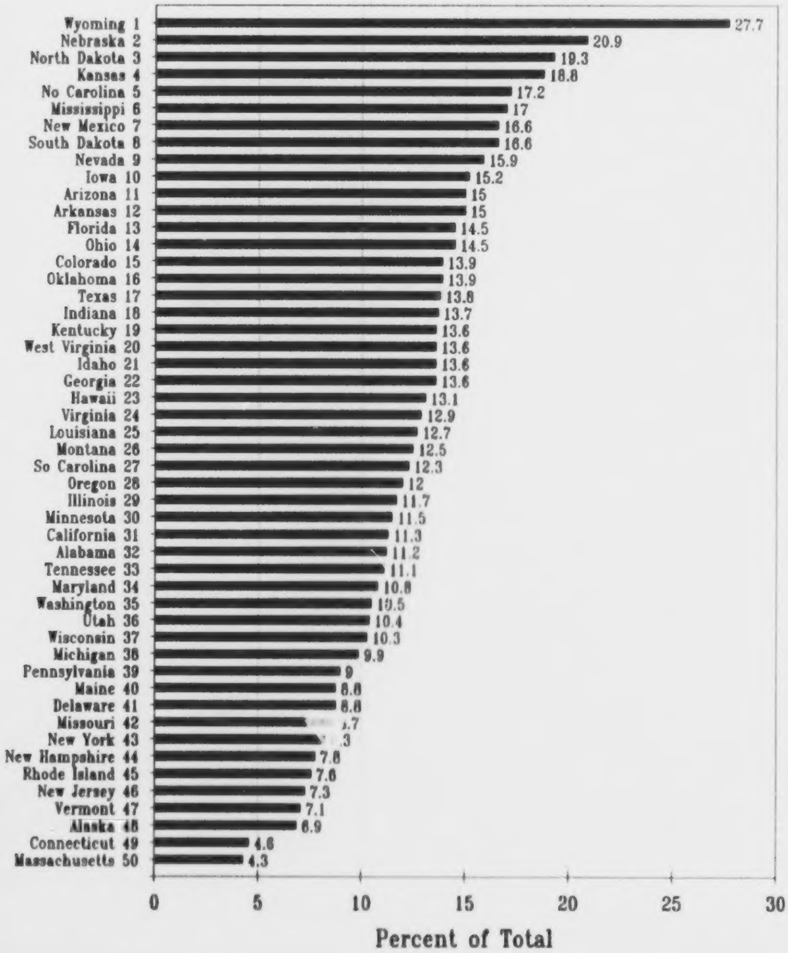
Across the states, own-source appropriations for higher education ranged from a 12.4 percent increase for **Oklahoma** to a 2.2 percent decrease for **Wisconsin**. Forty-four states had some increase in appropriations while six states reduced appropriations, as shown in the adjacent chart.

Competition for State Funds

Higher education's competition for state own-source appropriations has been corrections and Medicaid throughout the 1990s. In every fiscal year since the end of the 1980s, the annual percentage increases for both corrections and Medicaid has exceeded the annual percentage changes for higher education, usually by wide margins. FY1997 was no exception to this pattern, although the gap between higher education increases and those for corrections and Medicaid narrowed considerably in FY1997.

By state the percentage increases from FY1996 expenditures to FY1997 appropriations for the five major budget categories from own-source funding are shown in the spreadsheet on page 11. In only three states--**Florida, Rhode Island** and **New York**--did higher education receive a larger percentage increase than any of the other four budget categories reported by NCSL. In 31 states corrections received a larger percentage increase than did higher education. In 28 states Medicaid received a larger percentage increase, and in 27 states K-12 education received a larger increase than did higher education in FY1997. In only

Higher Education Share of Total State Appropriations
FY1997



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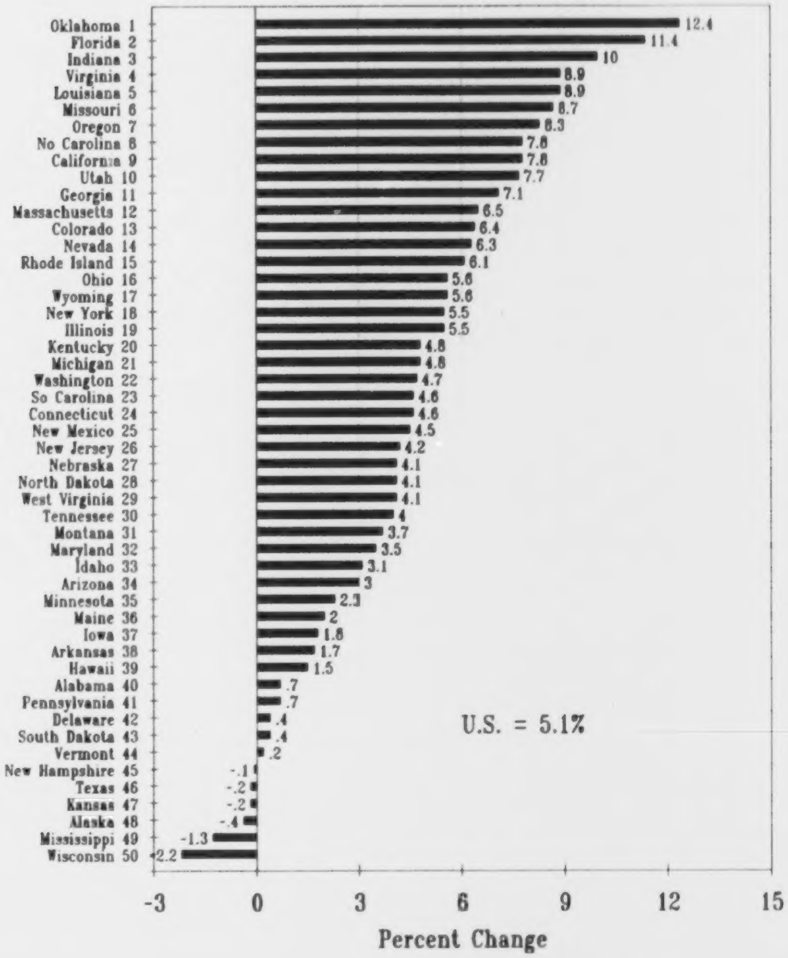
Change in Own-Source Appropriations for Higher Education
FY1996 Expenditures to FY1997 Appropriations



one state, **Delaware**, did higher education receive the smallest percentage increase of any of the five major state budget categories.

State Tax Cuts

Another source--the National Association of State Budget Officers--provides information on a new competitor for state funds: state tax cuts. As shown in the chart, states were enacting net revenue increases, year after year until 1995, in state taxes. But for the last three years, this historic pattern has reversed and states have enacted net reductions in state taxes. Thus, in the aggregate, state tax reductions have become a higher state budget priority than is financing higher education.

Social Investment versus Damage Control

A cursory review of the five state budget categories reported by NCSL suggests that some budget categories may be classified as social investment, while three categories may be categorized as social damage control.

- The investments in education are forward thinking.
- Expenditures for corrections, AFDC and Medicaid are devoted to addressing social pathologies among populations unable and largely unprepared to care for themselves.

Investments in education build state futures, while expenditures for corrections, AFDC and Medicaid address past failures.

For FY1997 the proportion of state appropriations for these five budget categories devoted to forward-thinking social investment through education ranged from 85.8 percent in **Utah** to 27.4 percent in **New Hampshire.**

In the case of Utah, large families make the state's population relatively young, thus focusing state resources on education. Most of the states near the top of this ranking are western or midwestern states, without large urban centers that often have large concentrations of social ills.

Most of the states near the bottom of this list are either in New England (with substantial private education systems) or are very large states with substantial urban centers.

There are important limitations to this type of analysis that must be identified to properly interpret the data and ranking. Foremost among these is the absence of local government tax contributions to these five budget categories, e.g., property tax support for K-12 education.

State roles vary widely in support for higher education. Further, expenditures measure very imperfectly measure effort and quality of educational opportunity for students in ways likely to produce long term investment returns to individuals and the states.

Summary

FY1997 state appropriations for higher education look good by some measures, and fall quite short by others. Compared to prior years of the 1990s, FY1997 was the best year yet.

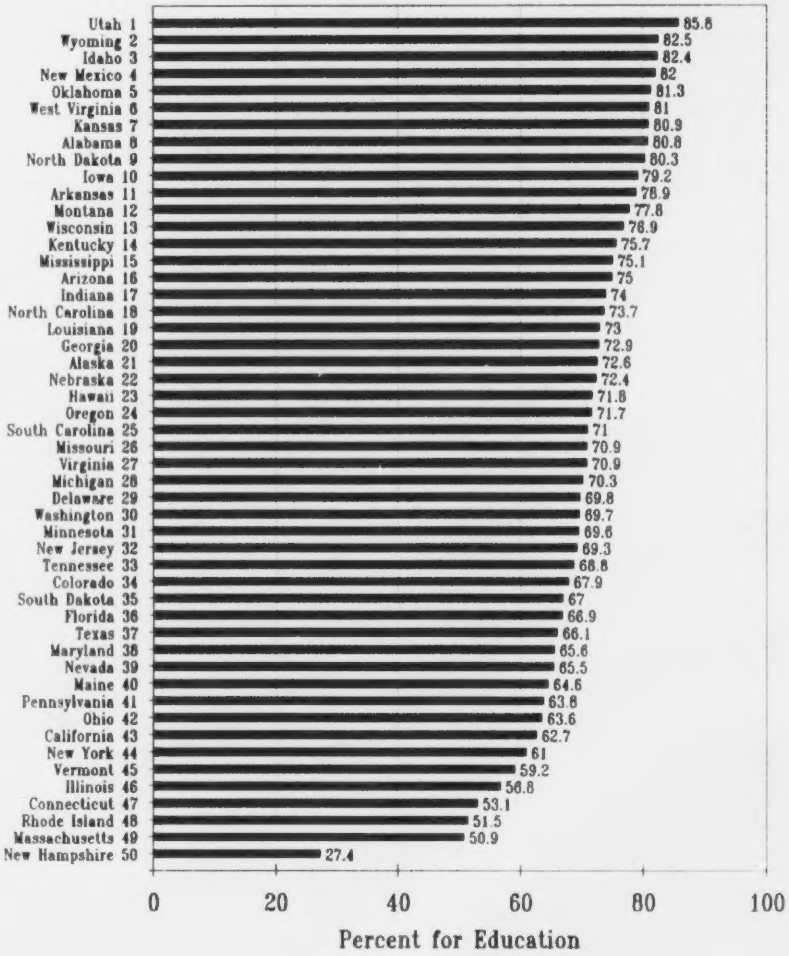
However, for FY1997 higher education ranked below corrections, Medicaid, K-12 education and tax cuts in state budget priorities. Higher education ranked only above AFDC, and quite likely current economic prosperity is responsible for at least a part of this difference.

In general current economic prosperity did two things to state budgets: increased state tax revenues and decreased demand for social services. These conditions enabled state budgeteers to improve higher education funding by a somewhat wider margin than has been the case in the previous three fiscal years.

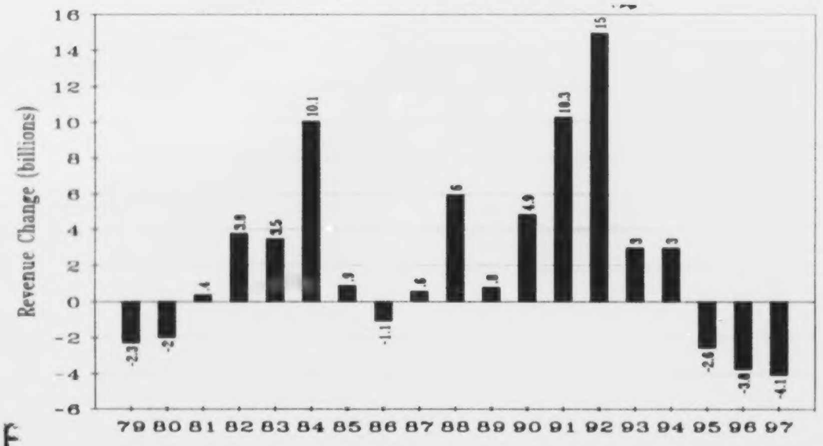
Relative to other state budget priorities, however, higher education remains at or near the bottom in the minds of most governors and state legislators. State appropriations will fall well short of needs, and public colleges and universities will again raise tuition and fee charges to students to offset the shortfall in needed institutional revenues. These increases will--once again--exceed inflation, student financial aid funding increases, and real growth in family resources available to pay them.

The bloom of FY1997 appropriations should be interpreted against this background with long-range planning for state funding of higher education to proceed along the path of privatization that states have pursued for the last 18 fiscal cycles.

Education Portion of Major Program Category Appropriations FY1997



Enacted State Revenue Changes FY1979 to FY1997



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14th Annual NASSGP/NCHELP Financial Aid Research Network Conference

May 15-17, 1997, Seattle, Washington

The annual national conference on student financial aid research will be held at The Madison Hotel, in Seattle, Washington, on May 15 to 17. Conference attendees include researchers and those interested in research on financial aid issues from state grant and loan agencies, federal agencies, national organizations, colleges and universities and other organizations.

The call for conference presentations requests proposals for models of grants and loan systems at state, federal and institutional levels. One day of the conference will be devoted to presentations and demonstrations of these models, with opportunities for hands-on interaction with locally available and remotely-connected data bases and simulation models.

Researchers are invited to submit proposals to the Conference Planning Committee through Dr. Jerry Davis at Sallie Mae. Examples of proposals presented at the 1996 conference in Annapolis were:

- The impact of student aid on persistence in Washington higher education
- College debt and the American family
- Default prevention: profiling high-risk borrowers
- Student loan discharge through bankruptcy: a review
- A review of state-funded access and retention programs in Massachusetts
- Symptoms of affordability problems in higher education
- How low income undergraduates finance postsecondary education
- Effects of the 1992 Higher Education Amendments: evidence from the Pell Grant program data
- The decision not to use a Pell Grant: evidence from a survey of Pell program participants
- Determining net costs: what do students really pay for college?
- New York HESC default collectability: identifying defaulters who will voluntarily repay
- The 1994-95 California student expenses and resources survey
- The relationship between public college and university tuition prices, financial aid budgets, and access to public postsecondary education
- Using financial aid in Arizona to shift enrollments from public to private institutions

Information on conference registration may be obtained from:

Dr. Jerry S. Davis
Director of Education and Student Loan Research
Sallie Mae - MDC #T4267
1050 Thomas Jefferson Street, NW
Washington, DC 20007-3871
Telephone: 202/298-3911
Fax: 202/298-4802
E-mail: jerry.s.davis@slma.com

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Postsecondary Education OPPORTUNITY

The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

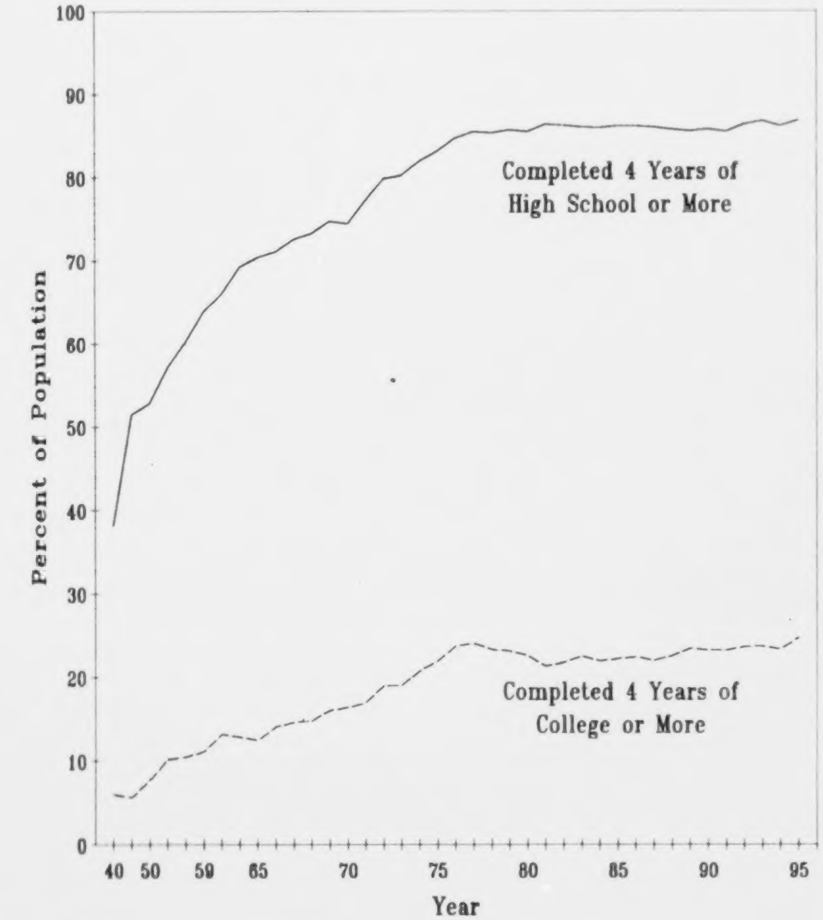
Number 56 **Iowa City, Iowa** **February 1997**

Educational Attainment of Young Adults
1940 to 1995

Since the early 1970s, the labor market has been redistributing private welfare according to educational attainment. Those with the least formal education have seen their incomes and the living standards those incomes support drop sharply. Those with 4 years of college have seen their incomes and living standards keep up with living costs. Those with education beyond the bachelor's degree have seen incomes rise faster than living costs, thus providing real gains in living standards.

Here we examine educational attainment of young adults--persons between the 25 and 29 years--who may reasonably be expected to have completed their high school educations and usually their baccalaureate educations as well. They are beginning about 40 years of labor force participation. The incomes that they earn will support not only themselves but children and the elderly as well, both directly as family members and through taxes paid to government that provide schools, food, housing medical care and other services to socially-dependent portions of the population.

Percent of Persons 25 to 29 Years Who Have Completed High School or More and 4 Years of College or More Selected Years: 1940 to 1995



Our analyses of these data identify many obvious and profoundly important conclusions:

- *Enormous gains in educational attainment of young adults occurred in America between 1940 and about 1976.*
- *Between 1976 and 1995 there have been practically no gains at all in the proportion of 25 to 29 year olds with 4 years or more of high school education.*
- *Likewise, between 1977 and 1995 there have been virtually no gains in the proportion of 25 to 29 year olds with 4 years or more of college education.*

During the last two decades, when the labor market has clearly, consistently,

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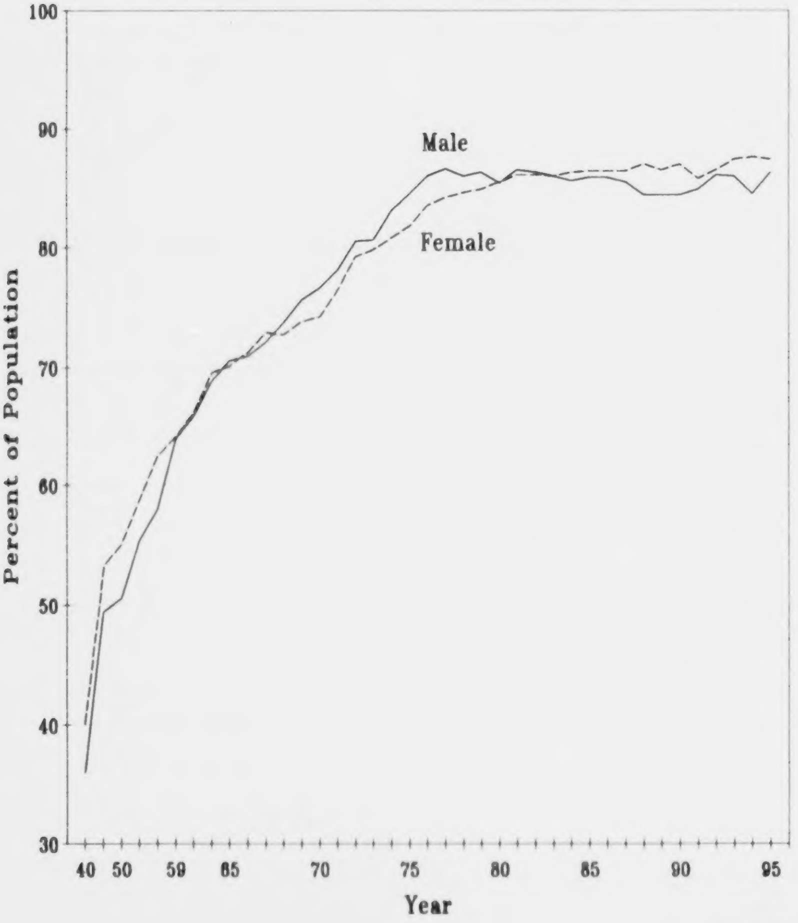
and increasingly loudly signaled for greater educational attainment among workers, the combined efforts of individuals and society have utterly failed to respond. To the extent that social welfare in its broadest dimensions is determined by the educational attainment of the adult population, our failure to broaden educational opportunities and attainment during the last two decades has, is and will continue to diminish our living standards.

These data obscure shifts in educational attainment between different segments of the population. Educational attainment among some groups has made some gains during the last two decades. These gains have been offset by clear losses in educational attainment among other groups during this period. Generally women are doing better than men, and blacks are doing better than Hispanics.

Here we summarize major trends in educational attainment among young adults. The summary data are disaggregated by gender and race/ethnicity. We look at both high school graduation--the barest minimum

Percent of Persons 25 to 29 Years Who Have Completed High School or More by Gender
Selected Years: 1940 to 1995



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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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educational credential for labor force participation at above-minimum wages--and at baccalaureate degree attainment--the minimum educational credential to live at a comfortable living standard with fair prospects to maintain that living standard during one's 40 years in the labor force.

The Data

All data reported in this analysis were collected by the Census Bureau and have been published, until recently, in the P20 series of Current Population Reports. The most recent and final report to be published in this series is:

Kominski, Robert and Adams, Andrea, *Educational Attainment in the United States: March 1993 and 1992.* U.S. Bureau of the Census, Current Population Reports, P20-476, U.S. Government Printing Office, Washington, DC, 1994.

Due to funding limitations, the Census Bureau has stopped publishing the complete reports in paper form. The 1994 Current Population Survey data have not been published at all, but were obtained through a special request to the Census Bureau.

Similarly, the complete set of P20 tables have not been published. However, the complete report, including all tables, may be downloaded from the Census Bureau's web site at:

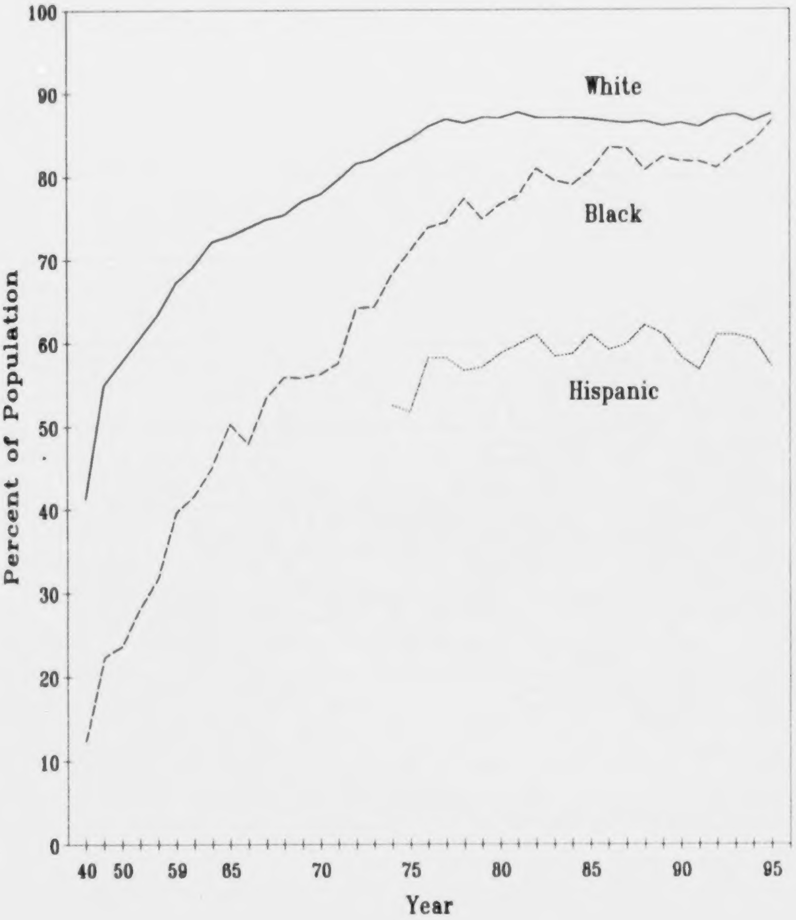
http://www.census.gov

To read and print this report including its extensive set of tables, the downloader must also download and install Adobe Acrobat software from the Adobe web site at:

http://www.adobe.com

This site can be accessed directly from the Census Bureau's home page.

Percent of Persons 25 to 29 Years Who Have Completed
High School or More by Race/Ethnicity
Selected Years: 1940 to 1995



Instructions are clear and the link worked flawlessly for us.

The Acrobat reader software is free, but the download includes downloader registration. For our purposes, the download of both Adobe Acrobat software, as well as the Census file containing the 1995 data file on educational attainment, performed flawlessly. Moreover, the printing of this file (of more than 100 pages) performed flawlessly on our HP Deskjet 870 Cse printer.

The presentation of data that follows is limited to educational attainment of persons 25 to 29 years old. Nearly all persons have completed their high school educations (or equivalent) by this age, and most of those who are going to receive their bachelor's degrees will have done so by this time. Additional data are available on educational attainment for older groups are available in the downloaded data files for those who may wish to pursue this question.

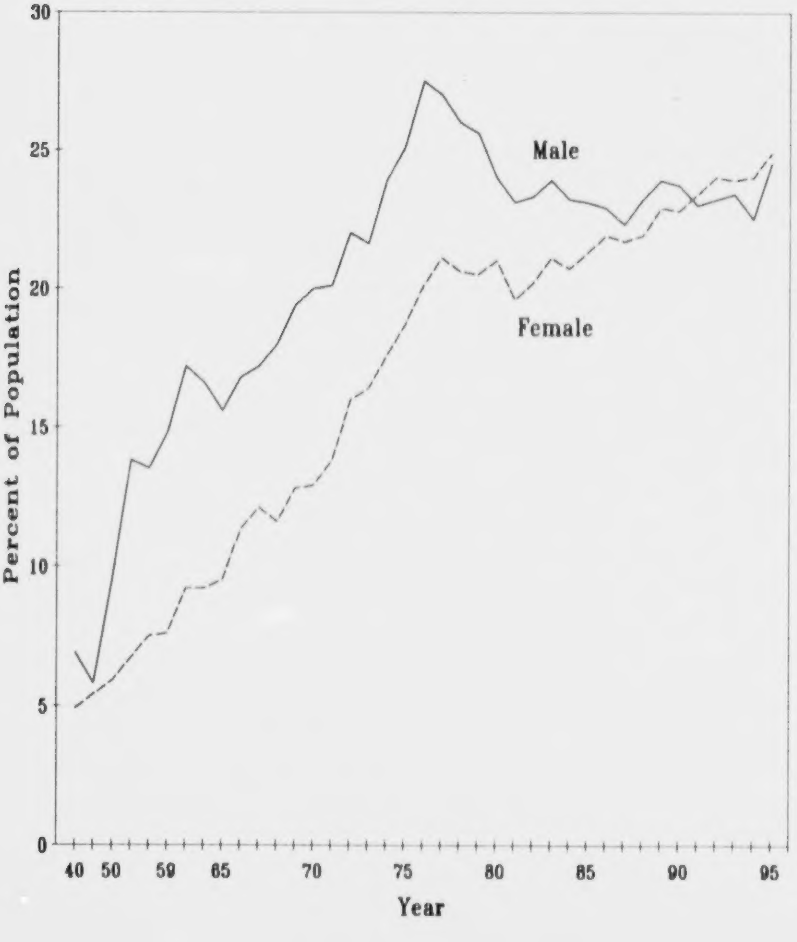
One caveat concerns data definitions of educational attainment used over the period of this survey, 1940 through 1995. Prior to 1992 the Current Population Survey asked for years of school completed. Beginning in 1992 the CPS asked for highest degree received.

For our purposes here, this change is not fatal. We equate completing 4 years of high school with receiving a high school diploma (or its equivalent). Also, we equate completing four years or more of college with receiving at least a bachelor's degree from college. Those who may have specific concerns about this change in definition are invited to review the discussion of this change contained in the 1994 report by Kominski and Adams.

High School Completion

In 1995 86.8 percent of all 25 to 29 year olds had completed 4 years of high school or more. This was the highest proportion recorded for any year since 1940. As shown in the chart on page 1 of this issue of OPPORTUNITY, the proportion of 25 to 29 year olds who were at least high school graduates increased sharply from 38.1 percent in 1940, to 51.4 percent by 1947, 60.2 percent by 1957, 72.5 percent by 1967, to 85.4 percent by 1977.

Percent of Persons 25 to 29 Years Who Have Completed
4 Years of College or More by Gender
Selected Years: 1940 to 1995



After 1977 this proportion has fluctuated between 85.4 percent in 1991 and 86.8 percent. For the last two decades there has been only the very slightest growth in high school graduation rates among young adults. And at least in this age-range, there appears to be little or no chance of reaching the national goal of a 90 percent high school graduation rate by the year 2000.

Gender. The chart on page 2 disaggregates these data on high school graduation rates by gender. The overall pattern still holds: growth between 1940 and about 1977, with fluctuation since then through 1995. However, between 1977 and 1995, the high school graduation rates for males actually *declined*, from 96.6 to 86.3 percent. During this period the high school graduation rate for females increased, from 84.2 to 87.4 percent.

Race/ethnicity. The chart on page 3 shows high school graduates for whites, blacks and Hispanics (most of whom are also counted as whites because Hispanics may be of any race). In 1995 87.4 percent of all whites between 25 and 29 years were high school graduates, compared to 86.5 percent for blacks and 57.1 percent for Hispanics.

While the overall pattern of growth holds between 1940 and about 1977, since then trends diverge. Between 1977 and 1995, the rate for whites increased by 0.6 percent. For blacks the proportion also increased, by 12.1 percent. However, for Hispanics the proportion actually decreased by 1.0 percent. Clearly blacks have been the big winners over the last two decades in high school graduation.

4 Year College Completion

In 1995 24.7 percent of the population of 25 to 29 years olds had completed 4 years or more of college, the highest on record. This was up sharply from 5.9 percent in 1940 and 5.6 percent in 1947. However, it had changed little from the peak of 24.0 percent reached in 1977. These data are shown on page 1 of this issue.

Gender. The chart on page 4 shows these data by gender. In 1995 24.5 percent of males and 24.9 percent of females between 25 and 29 years had completed 4 years or more of college. Between 1977 and 1995, males and females have gone in different directions. For males the 4 year college completion rate has declined by 2.5 percent. For females the rate has increased by 3.8 percent. Some part of this is clearly attributable to the effects of the Vietnam War on male college enrollment. But even well after that War, females have made steady and substantial progress compared to males.

Race/ethnicity. The chart on page 5 shows the proportion of 25 to 29 year olds that have completed 4 years or more of college for whites, blacks and Hispanics (who are largely included in the data for whites). In 1995 26.0 percent of whites had completed 4 years or more of college, compared to 15.3 percent of blacks and 8.9 percent for Hispanics. Over time, whites and blacks showed large gains in 4 year college completion between 1940 and about 1976. For both groups the proportion with 4 years or more of college was at record levels in 1995, although gains over the last two decades have been modest.

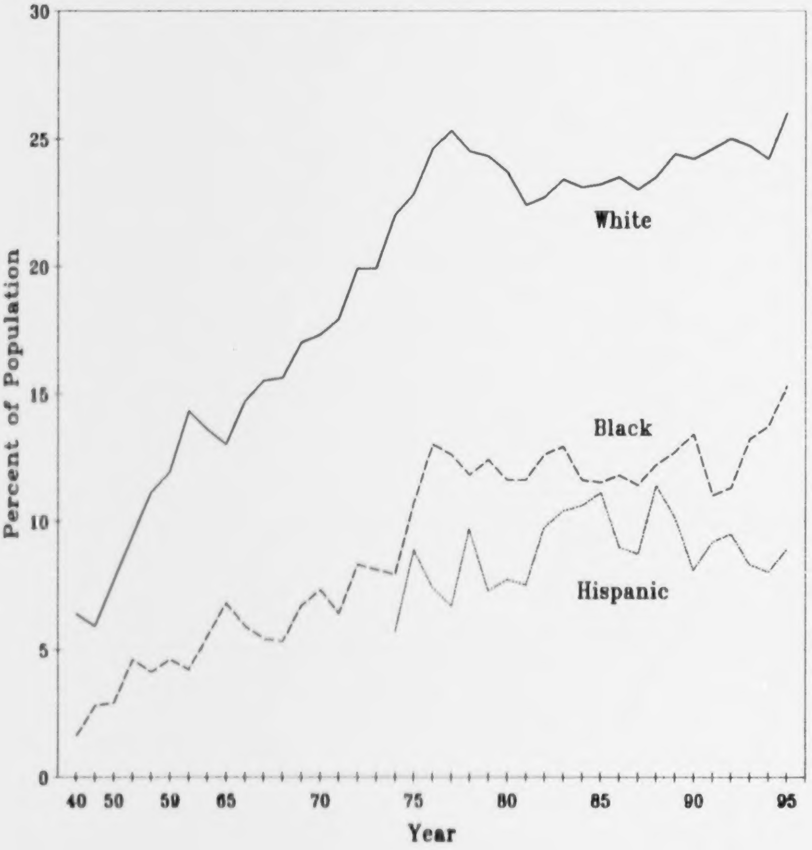
The same cannot be said for Hispanics. The charted data show gains between 1974 and about 1988. However, since the 1988 peak of 11.4 percent, the rate has dropped to 8.9 percent.

Conclusions

This analysis was prompted by clear labor market signals about the growing importance of college-level education to the incomes of individuals and the living standards those incomes support. Since the late 1970s, while the premium paid college-educated workers over those with high school educations or less has grown, the proportion of the population of 25 to 29 year olds with a bachelor's degree from college has remained largely flat. In the aggregate, college-level educational attainment has responded only very weakly to the very strong labor market signal that the best paid jobs are increasingly reserved only for those with college education.

Within the totals, however, different groups are doing better at gaining college-level educations than are other groups. Generally, females are continuing to make slow but steady progress in obtaining collegiate-level educations, while males have been stumbling along and falling behind females. Whites are far ahead of both blacks and Hispanics in completing 4 years of college education or more. Hispanics have made no progress on high school graduation in the last two decades, and have been losing ground since the late 1980s compared to progress they had made between the mid 1970s and late 1980s.

Percent of Persons 25 to 29 Years Who Have Completed
4 Years of College or More by Race/Ethnicity
Selected Years: 1940 to 1995



The Southern Perspective on Financing Opportunity for Higher Education

States use a variety of means to finance opportunity for higher education. These include reliance on private institutions (with or without state support), general fund and earmarked fund appropriations to public institutions, tuition and fee charges, financial aid, tuition waivers, tax advantages, college savings bonds, pre-paid tuition plans, etc. In some cases these choices have distinctive regional patterns.

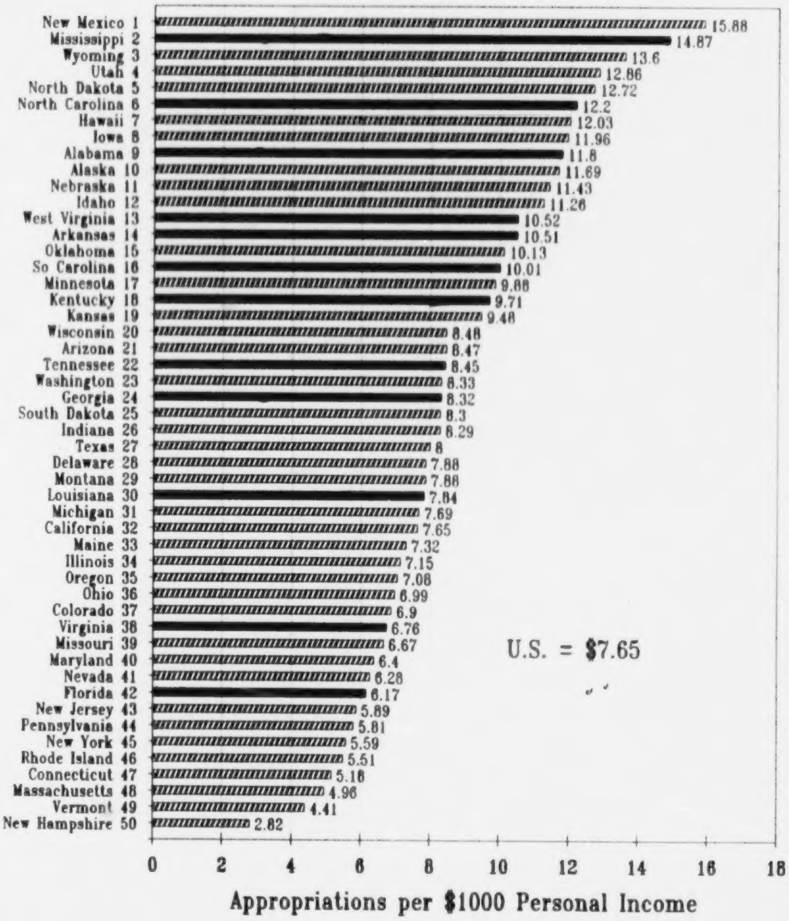
One of these sets of state choices is described here: how the southern states' choices differ from those of the rest of the country in the way opportunity for postsecondary education and training is financed. There are other regional patterns, e.g., high tuition and high financial aid in states with large private sectors, and low tuition and little or no financial aid in many western states.

But how the southern states finance opportunity for higher education today is particularly important because of the domination of the executive and legislative branches of the federal government in Washington, DC, by southerners . The President is from Arkansas. The Vice President is from Tennessee. The Secretary of Education is from South Carolina. The Speaker of the House of Representatives is from Georgia. The Senate Majority Leader is from Mississippi. Other Congressmen and Senators in positions of leadership come from additional southern states, especially Texas.

Moreover, regularly scheduled reauthorization of The Higher Education Act begins this year. This reauthorization cycle will occur under the guidance and leadership of southern political leadership. Already the President has a federal income tax proposal that he has advocated during his recent re-election campaign, and his proposal is both named after and adopts some of the features of Georgia's HOPE Scholarship program.

This analysis of the Southern Perspective has three main parts. The first part of the analysis examines the general structure of state financing of higher education, including tax base and rate, tax resource allocation, and rates charged students through tuition and fees. The second part of this analysis examines the ways southern

Appropriations of State Tax Funds for Operating Expenses of Higher Education per $1000 of Personal Income FY1997



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states design their student financial aid programs, especially their focus on merit-based aid and who benefits and who looses under these criteria. The third part of this analysis examines the effectiveness of this strategy in fostering higher educational access.

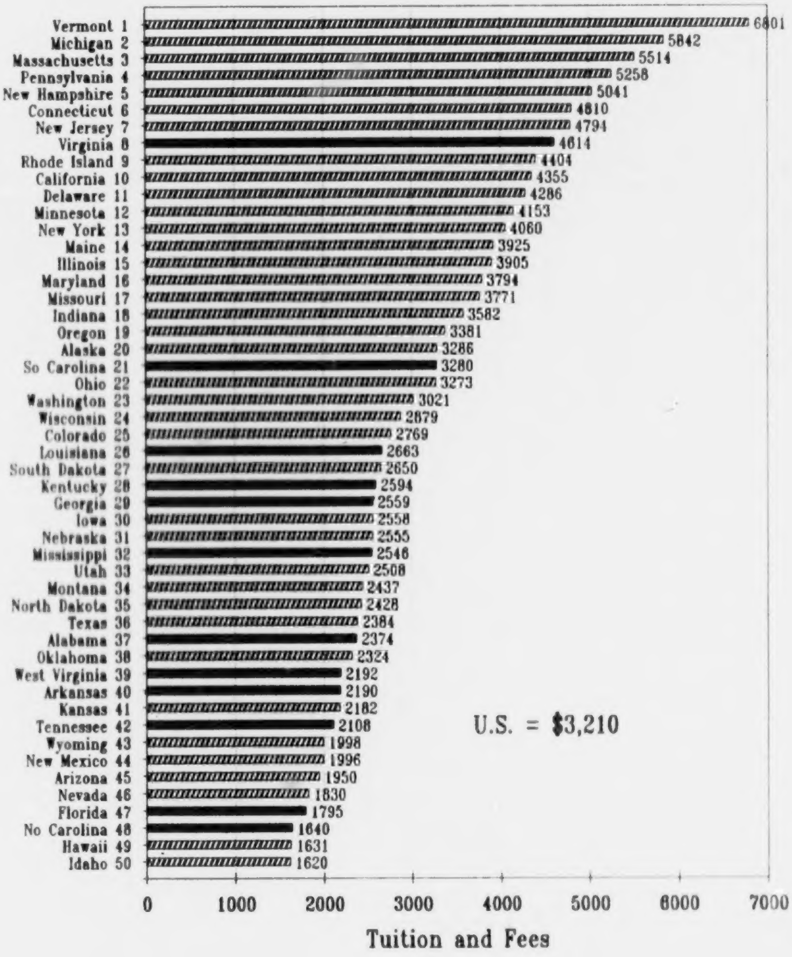
What this analysis finds is that Southern states differ from the rest of the country in the way they view state roles in financing opportunity for higher education for students. Given the domination of the federal executive and legislative branches of government by Southerners, it behooves all involved in the design of federal student financial aid policy to understand these differences as Congress embarks on the process of reauthorization of the Higher Education Act that establishes most of the financial aid programs funding students in higher education today.

For purposes of this analysis, we define the South as twelve states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia. We recognize that different choices are possible. We are less concerned with questions about specific states being in or out of this group than we are the more general regional focus. Those wishing to examine different configurations are invited to reconstruct the following analyses with their own definitions of southern states.

Financing Higher Education in the South

Generally, the South is somewhat poorer than the rest of the country, makes extraordinary efforts to support its public colleges and universities, and charges relatively low tuition and fees to undergraduates in its public institutions.

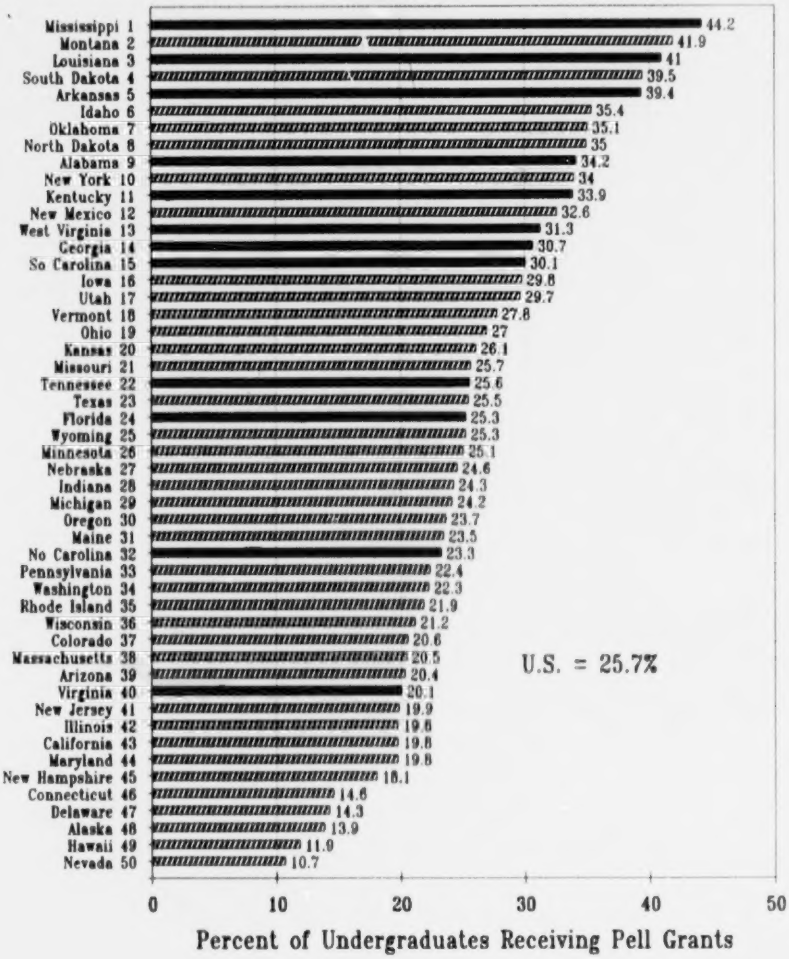
State Flagship University Undergraduate Tuition and Fees, FY1996



Resources available to support higher education. The tax base of states to support state activities is generally personal income. The Southern states have lower per capita personal income than the rest of the country.

- In 1995 our twelve Southern states had 35 percent of the population of the U.S., but 32.1 percent of the personal income.
- Per capita personal income averaged $18,259 for the Southern states and $21,940 for the U.S. The Southern states had about 83 percent of the national average. Only Virginia's per capita personal income equaled the U.S. average--the other 11 Southern states were all below the national average.
- Disposable per capita personal income averaged $17,257 in the Southern states, compared to $19,729 for the U.S. The Southern states' average was about 87 percent of the national average. Only Virginia and Florida had disposable per capita personal income above the national average.
- The poverty rate for these 12 Southern states averaged 16.4 percent, compared to 14.5 percent

Pell Grant Program Participation by State
FY1995



for the U.S. in 1994. Only Georgia, North Carolina, South Carolina and Virginia had poverty rates below the national average. Over the last 15 years the income gap has narrowed somewhat as population growth--notably in Georgia and Florida--has fostered economic activity and resulting economic growth.

An important part of the relatively lower personal incomes in the South is the relatively lower level of educational attainment among its adults. Everywhere, income is closely related to educational attainment. Data collected in the 1990 Census found that the proportion of adults with at least some college averaged 38.2 percent for these 12 Southern states, but averaged 45.2 percent for the U.S. Only Virginia had a larger proportion of its adults with some college education than the national average.

Resources applied to support higher education. Despite being somewhat poorer than the rest of the U. S., or perhaps because of it, these twelve Southern states try harder--generally much harder--to finance higher education than does the U.S. as a whole. The average for the twelve Southern states was $9.76 of state tax fund appropriations for higher education per $1000 of personal income in FY1997. The average for the U.S. was $7.65. These Southern states averaged 127.6 percent of the U.S. effort. All of these Southern states except Florida and Virginia exceeded the national average level of state tax support for higher education controlling for state resources available for this purpose. These data are shown in the chart on page 6.

Tuition and fee charges to undergraduates. These Southern states may be fairly characterized as low-tuition states. Here we look only at tuition and fee charges faced by resident undergraduate students in three types of public institutions.

At state flagship university campuses, undergraduates in southern universities paid an average of $2546 in 1995-96, compared to the national average of $3210. Tuition and fees in the South averaged about 79 percent of the national average. Only Virginia and South Carolina had tuition and fees that exceeded the national average.

At state colleges and universities, undergraduates faced tuition and fee charges in Southern institutions of $2229 in 1994-95. By comparison, the U.S. average was $2534. The average for the Southern colleges and universities was 88 percent of the U. S. average. Again, only Virginia and South Carolina had tuition and fee charges that exceeded the national average.

At community colleges, students faced tuition and fee charges in Southern institutions that averaged $1064 in 1995-96, compared to $1391 for the U.S. Community college tuition and fees in the South averaged 76.5

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percent of the U. S. average. Only Virginia had community college tuition and fees that exceeded the national average.

Student Financial Aid in the South

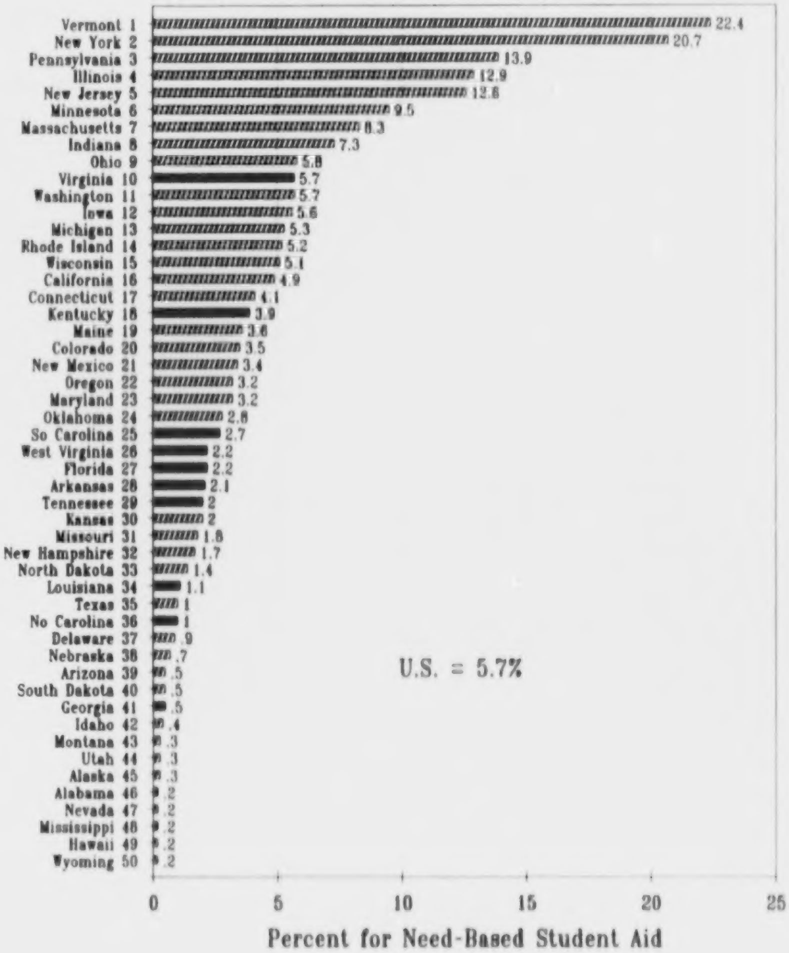
Although students in colleges and universities in the South are particularly dependent on federal need-based student financial aid to finance their higher education, southern states spend relatively little on need-based student financial aid themselves. Rather, Southern states lead the country in non-need based student aid. Unlike most of the rest of the country, these southern states have chosen to award student aid on bases other than need, including and especially academic achievement.

Pell Grant program participation. The federal Pell Grant program is targeted on students from lowest family income backgrounds. Thus, states with larger than average concentrations of poor people, or states where family incomes are relatively low, are particularly financially needy and therefore dependent on need-based student aid to help finance higher education.

For the 1994-95 academic year, an average of 31.6 percent of the undergraduates enrolled in colleges and universities in the twelve southern states received Pell Grants. This compares to 25.7 percent for the country as a whole. The southern states Pell Grant program participation rate was 123 percent of the national average. Only Virginia, North Carolina, Florida and Tennessee had Pell Grant program participation rates below the national average.

These data indicate that colleges and universities in the southern states have especially high proportions of students from low-income family backgrounds receiving federally-financed need-based student aid in their enrollments. This is to be expected given the relatively low personal income base and high poverty rates in these states.

Percent of State Appropriations for Need-Based Student Aid
FY1995



State need-based student aid. Despite the relatively low incomes of southerners, and federally-demonstrated need for need-based student financial aid, the southern states allocate relatively very small proportions of their state funding for higher education to need-based student financial aid programs.

For FY1995 the twelve southern states allocated an average of 2.0 percent of their state higher education funding to need-based student financial aid programs. This compares to 5.7 percent for all states. Only Virginia's allocation equaled the national average--the other eleven southern states provided much less. The southern effort was about 35 percent of the national average share targeted on financially needy students. These data are shown in the above chart.

Non-need based student financial aid in the South. Despite the relative

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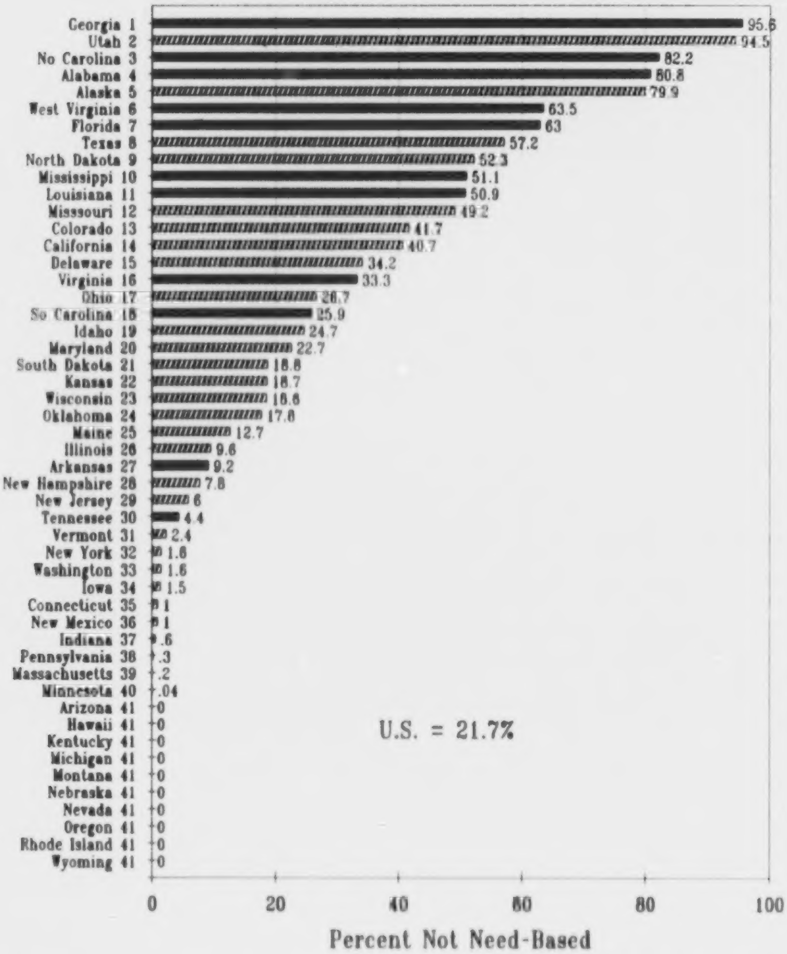
Proportion of State Financial Aid Dollars that are Non-Need Based, FY1995



disinterest in need-based student financial aid in the southern states, these states remain interested in student financial aid. The difference is that most southern states are interested in financial aid that is not based on demonstrated financial need for such aid.

As shown in the above chart, most southern states rank near the top in the proportion of state financial aid that is not need-based. Georgia leads the states with over 95 percent of its state student financial aid awards not based on demonstrated financial need of students. For the twelve southern states, the average proportion of state financial aid dollars not awarded on the basis of financial need is 46.7 percent, compared to 21.7 percent for the U.S. The southern state focus on non-need based student aid is 215 percent of the national average. Kentucky funds no non-need based student aid, and Tennessee and Arkansas are also below the national average, while the other nine southern states are above the national average.

Chance for college in the South. To reach college a student must both graduate from high school *and* continue on to college. In 1994 40.0 percent of U.S. 19 years olds made it over both hurdles and were enrolled in college.

However, in only one southern state--Mississippi--were more than 40 percent of all 18 year olds enrolled in college. In the other eleven southern states, the proportion of 19 year olds enrolled in college was below the national average. The average for the twelve southern states was 35.8 percent, or about 90 percent of the national average.

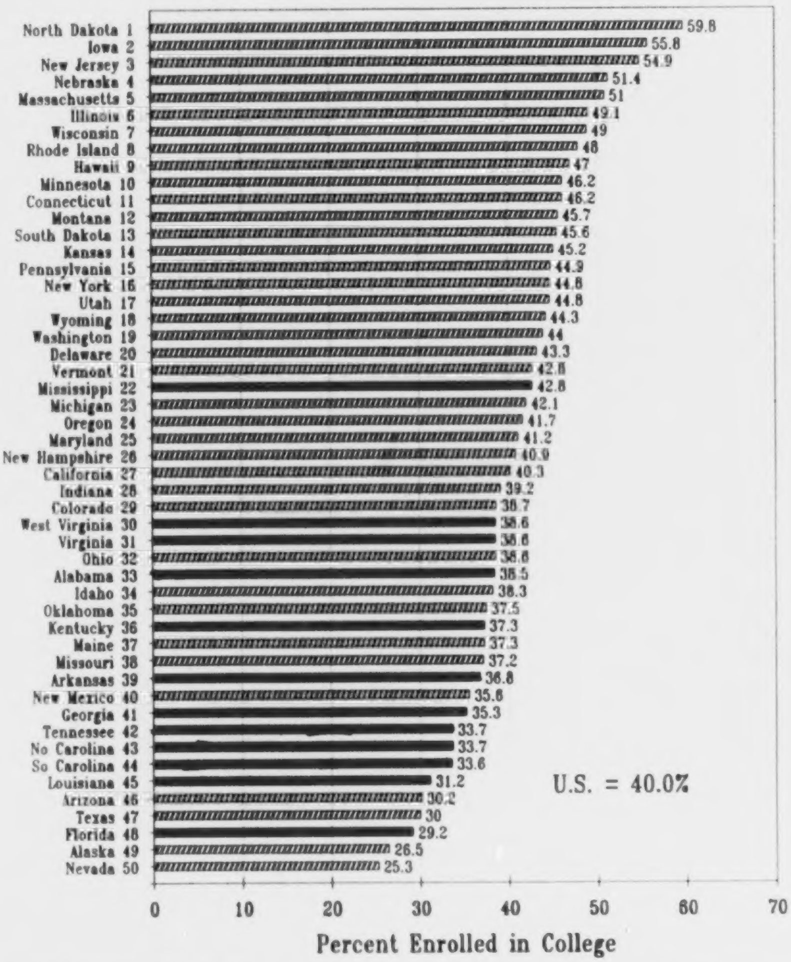
Chance for college by age 19 is based on both high school graduation and college continuation. The public high school graduation rate in the twelve southern states in 1994 averaged 65.7 percent, compared to 70 percent for the U.S. The college continuation rate for high school graduates in the southern states was 54.8 percent, compared to 57.2 percent for the U.S. In both cases the rates of educational progression of these young people were about 94 to 96 percent of the U.S. average, and their product is chance for college by age 19 as used here.

Conclusions

The twelve southern states examined here tend to differ from the rest of the states in their approaches to financing higher education generally, in their approach to student financial aid in particular, and in the results they achieve. This is a very important observation in light of the almost complete domination of the federal government higher educational policy-making apparatus by southerners.

As a group, these twelve southern states are relatively poor and provide extraordinary financial support for higher education relative to their resources. This extraordinary level of state support enables public institutions

Chance for College by Age 19
by State, 1994



to charge relatively low tuitions to their students.

Despite the obvious need for needs-tested assistance to students in higher education, the southern states have largely passed up this option. Apparently what the federal government provides does not illustrate to southerners the financial needs of students in higher education in southern colleges and universities. Instead, what financial aid is provided by states is not awarded on the basis of need, but often on the basis of grades or some other "merit" criteria.

This approach to financing higher education in the South has not produced impressive results. In only one of the twelve southern states are a 19 year old's chances of being enrolled in college above the national average. In the other eleven states, chances of being enrolled in college are often far below the national average.

One obvious explanation for this state of affairs is that the extraordinary effort made to finance higher education by southerners is not effectively spent. If the objective of state investment in higher education is to broaden educational opportunity, then much of this state effort is mis-spent. Too much of it goes to people without demonstrable financial need for the assistance, and not enough of it is targeted on those whose educational opportunities are curtailed or cut-off completely by limited financial resources.

Clearly most of the southern states are seriously committed to educational opportunity and achievement. What is far less clear is that this financial commitment has broadened educational opportunity. By the economic criteria of maximizing educational opportunity from a given or fixed base of state resources provided for this purpose, the southern commitment to low tuition and non-need-based student aid, and absence of a focus on need-based student assistance, has been unsuccessful in broadening educational opportunity. The well-above average financial commitment has produced well-below average college enrollment rates by age 19.

The implications of this for federal educational policy generally, and the reauthorization of the Higher Education Act in particular, are clear. The southern approach to financing higher educational opportunity--now most evident in President Clinton's Hope tuition tax program, modeled on Georgia's HOPE Scholarship program--has not been shown to be effective. The country should be skeptical in adopting the southern perspective on financing opportunity for education after high school.

Straightforward economics has been the historical basis for federal need-based student aid policy. More than 40 years of econometric studies of the effects of price and student aid have produced consistent results. This well founded scientific basis for federal policy should not be ignored now.

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An editorial . . .

Georgia's HOPE Scholarship Program: Good Intentions, Strong Funding, Bad Design

The editorial position of OPPORTUNITY is that Georgia's HOPE Scholarship program is fatally flawed and represents bad public policy.

Because this program has received a great deal of publicity and has been described as the model for President Clinton's tuition tax credit proposal, its glaring faults deserve equal exposure. For the record, the following is why we believe Georgia's HOPE Scholarship program is bad for Georgians, bad for other states to emulate, and is a bad model for federal educational opportunity policy generally, and student financial aid policy in particular.

Program Description

HOPE stands for Helping Outstanding Pupils Educationally and is a program of financial aid based on academic merit. It is the creation of Georgia's governor, Zell Miller. HOPE is financed by proceeds from the Georgia Lottery. HOPE is well described at the internet site of the Georgia Student Finance Commission:

http:/www.hope.gsfc.org/

HOPE is not a single program, but a collection of postsecondary student financial aid programs. There are separate requirements for:

- Degree-seeking students attending public institutions
- Diploma/certificate-seeking students attending public institutions
- Students attending Georgia private colleges and universities
- GED recipients.

The following analysis focuses on the way the program works in public universities and colleges.

The Affordability Problem and Its Causes

There is a profoundly serious problem of college affordability in the United States that has been growing since about 1979. It results directly from two problems: the higher education cost shift from taxpayers to students that has been underway nationally and in Georgia since 1979, and from the poor getting poorer and less able to afford college without financial aid.

At the federal level the financing problem is created by shifting federal student financial aid from grants to loans. At the state level the affordability problem is worsened by diverting state resources from higher education into corrections, Medicaid, and more recently tax cuts, then raising public institution tuitions to offset the loss in state appropriations.

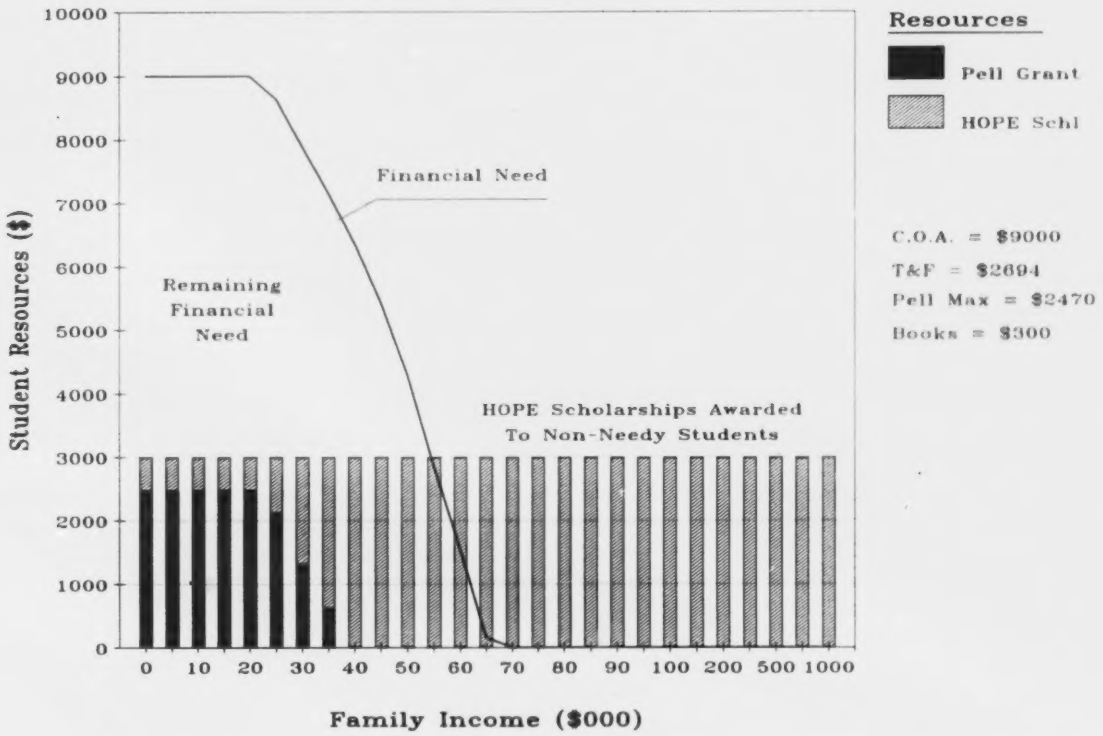
- Georgia appropriated $11.42 of state tax funds per $1000 of personal income for higher education in 1979. This declined to a low of $7.88 in 1992, and has since rebounded to $8.32 for the current academic and fiscal year. Between 1979 and now, state tax support declined by about 27 percent.
- Tuition and fee charges, in constant dollars, increased by 56 percent at the University of Georgia, 47 percent at state colleges and universities, and by 33 percent in community colleges between 1979 and 1996.

Public policy--federal and state (including Georgia)--has created the affordability problem. And the affordability problem has made opportunity for higher education steadily more unequal since this cost shift began in 1979. By the mid-1990s in the U.S., higher educational opportunity has become more unequally distributed across income levels than it has been at any time since 1970 when the Census Bureau first began reporting the data on which these calculations are based.

It is against this backdrop that Georgia's HOPE Scholarship Program is criticized. These criticisms revolve around six points described below. At the conclusion of this analysis some recommendations around which to rebuild an opportunity-based educational policy for Georgia are offered.

1. Poor people are excluded from eligibility. Under the award formula for HOPE Scholarship eligibility, the award is tuition and fees minus federal student aid, especially the Pell Grant (but also including Supplemental Educational Opportunity Grant or Job Training Partnership Act). With a Pell Grant maximum award of $2470 for 1995-96, that means poor students--even those earning B grades--cannot receive a HOPE scholarship to offset tuition and fees at a public institution with tuition and fees of less than

Financing Undergraduate Education at University of Georgia
1996-97 Academic Year



$2470. Poor students need the Pell Grant money to pay for food, housing, transportation, and personal and medical care while attending college. The poorest people for whom financial barriers to higher education are greatest receive the smallest HOPE Scholarships under the formula chosen by Georgia's governor and legislature.

2. Rich people, who do not have need for aid to finance college, receive HOPE Scholarships. There is no needs-test for HOPE scholarships, nor is there an income cap. The original family income cap, which was first $60,000, then raised to $100,000, has since been removed altogether. This means that students from high income families who do not have need for financial aid to pay college costs end up receiving HOPE Scholarships. This financial aid is in addition to the state subsidy that holds tuition charges well below costs of providing educational services. So a student from a very high income family could receive a Georgia HOPE Scholarship, but a student from the lowest income family would receive nothing more than a book allowance.

In the economic world of highly constrained social welfare maximization, giving scarce financial aid resources to people who do not need them is wasteful, unnecessary, unproductive, and comes at the price of adequate and appropriate student financial aid for others who could not afford to attend college without such assistance.

3. The funding source for HOPE Scholarships may be disproportionately poor people. We do not know the income profile of who plays the Georgia Lottery. But in other states poor people play the lotteries at greater rates than do people from higher incomes. If this is true in Georgia, then the program functions as an income transfer program from poor to rich.

4. The B grade average requirement tends to favor already blessed types of students, at the expense of other students who already bear educational handicaps. Females, whites, Asians, students with college educated parents and students from high income families are far more likely to have and maintain B averages. Males, blacks, Mexican-Americans, students from families where the parents have little or no college educations, and students from low income families are least likely to have and maintain B averages. This grade requirement for HOPE Scholarship eligibility tends to favor those who have least difficulty and disfavor those who are having greatest difficulty in financing their higher educations.

The Constitution notwithstanding, not everyone is born equal. Nor do students come from equally situated families and enroll in schools that provide equal educational opportunities. The B grade average favors those least in need of incentives and assistance, and disfavors those who need the most help. This is almost certainly no less true in Georgia than it is everywhere else.

5. The achievement of B grades may be more the result of grade inflation than it is student achievement. During the Vietnam War, some college professors were unwilling to give grades to males that would expose them to being drafted for military service. Noticeable grade inflation occurred then. Grade inflation is a rampant problem in high schools and colleges now. The incentives for faculty who care about their student's qualification for financial aid are to award qualifying grades. And this year, 97 percent of the Georgia-resident freshmen enrolled at Georgia Tech and the University of Georgia are reported by *Newsweek* to not be paying any tuition and fees.

6. For FY1997, Georgia cut state funding for its very small need-based grant program in half. Georgia's efforts to meet the financial needs of its financially needy students were relatively modest to begin with through the Student Incentive Grant program. But even that effort has been steadily reduced, from $5.3 million in FY1994, to $5.1 million in FY1995, to $4.8 million in FY1996, to $2.2 million in FY1997.

This reduction in state support for an existing higher education program may be in violation of the Georgia law creating HOPE scholarships which requires HOPE to supplement--not supplant--existing state support for higher education. Moreover, it jeopardizes Georgia's eligibility for federal State Student Incentive Grants due to the SSIG maintenance-of-effort requirement. No other state has so reduced its financial aid for its neediest students as has Georgia over the last several years.

Using HOPE Resources to Broaden Educational Opportunity in Georgia

There are ways to accomplish many of Georgia's educational goals that are less regressive and more effective than the way the HOPE Scholarship programs operates today. Here are suggestions:

1. Adopt the high school new basics curriculum recommended in *A Nation at Risk* for those planning to go to college and for HOPE eligibility, and encourage those not planning to go to college to also take this curriculum so that the option of college is not foreclosed to them at a later date.
> 4 years of English and 3 years each of social studies, science and mathematics.
> Provide resources to Georgia secondary schools sufficient to enable them to offer this curriculum, particularly in rural locations.

2. Measure and report back to secondary schools on the progress of their students in academic course taking, graduation rates, test results, college continuation and other desired outcomes with respect to Georgia's educational objectives. Combine this feed-back with goal-setting, research on successful strategies and guidelines for improvement.

3. Market the private benefits of becoming higher educated. School children and their parents should understand by junior high school the benefits and consequences of their educational choices and commitments. Higher education in the United States does nothing at all to educate the public about the extraordinary benefits of higher education--and, in this economic and labor market, the consequences of trying to start adult life without postsecondary education or training.

4. Focus limited state resources to those who demonstrate financial need for them.
> Remove the Pell Grant deduction from the HOPE award calculation.
> Limit HOPE Scholarship eligibility to demonstrated financial need under the established rules and formulas of financial aid.
> Condition continued eligibility on meeting institutional satisfactory academic progress standards, not on maintaining B average grades.

In an economic environment that demands that all workers' skills be raised in response to challenges from technology and competition, that citizens decipher the essence of complex public issues and make wise political choices, that communities are lead and populated by people of vision and compassion, Georgia would gain more by focusing the resources of HOPE on those who need them.

HOPE for President Clinton

Two features of the Georgia HOPE program have been adopted by President Clinton in his education proposals: the Pell Grant offset, and B-average grades for eligibility renewal. Neither would make any better federal student financial aid policy than they make in the Georgia HOPE program. President Clinton's proposal is to increase the Pell Grant maximum award for poorest students by $300, while providing tax benefits to students from more affluent families of $1500. This is an extension of the Middle Income Student Assistance Act of 1978, as well as the 1986 Education Amendments, where token benefits were offered to low family income students while much larger benefits were offered to students from middle income families. This probably wouldn't happen if poor people voted.

Tax haven . . . . . . of the industrial world

Tax Effort in the United States

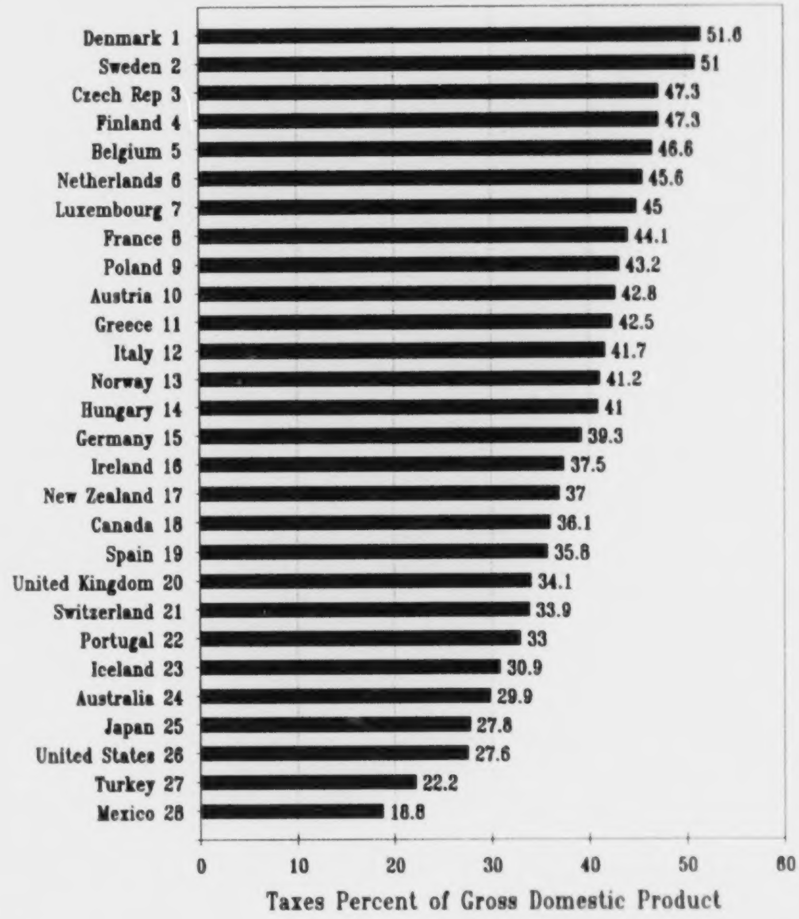
As the United States considers various proposals to reduce taxes and the programs those taxes support both at the federal and state levels, it behooves us as citizens to understand just how much we do pay to our federal, state and local government in taxes.

Despite the claims of some politicians that Americans are over-taxed, abundant and credible evidence exists that quite the opposite is true: Americans are among the least taxed of any population in the industrial world. We may not always agree on what services government should provide, but the evidence shows clearly that Americans pay a smaller share of our gross domestic product (GDP) to federal, state and local governments than 25 of the 28 members of the Organization for Economic Cooperation and Development (OECD). Only taxpayers of Turkey and Mexico pay smaller shares of their GDP to their governments than do Americans.

Here we briefly review the most recent data on revenue statistics of governments published by the OECD.

Revenue Statistics of OECD Member Countries, 1965-1995. 1996 Edition. Paris: Organisation for Economic Co-Operation and Development.

Total Tax Revenue
as a Percent of Gross Domestic Product
1994



The OECD was created by treaty in 1960 "to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy." Currently 28 countries are members, the most recent addition being Hungary in 1996.

As defined by OECD, taxes refer to compulsory, unrequited payments to general government. Taxes are unrequited in the sense that benefits provided by government to taxpayers are not normally in proportion to their payments. Fines and fees are not taxes. Tax types are classified as income and profits, social security, goods and services, property, payroll and other.

Tax Effort

The OECD calculates tax effort as the sum of government tax revenues divided by gross domestic product for each member country.

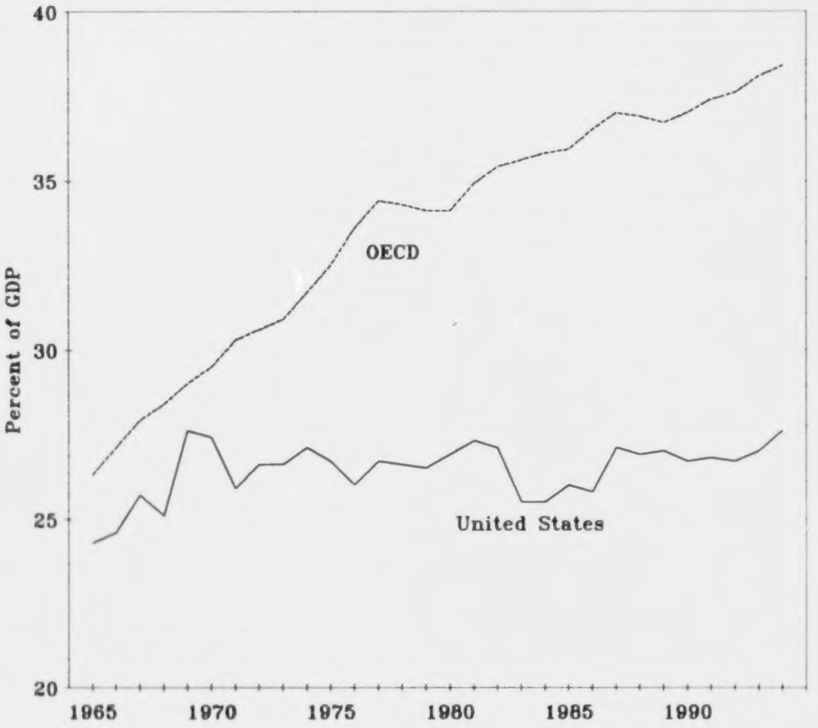
In 1994 the unweighted average of

total tax revenue as a proportion of GDP for the 28 OECD countries was 38.4 percent. Among the European countries it was 40.8 percent. In American countries it was 27.5 percent, and among the Pacific countries it was 31.6 percent. Across all OECD countries the range was from 18.8 percent in Mexico to 51.6 percent in Denmark.

In the United States federal, state and local government taxes amounted to 27.6 percent of GDP in 1994. This was about 72 percent of the OECD average, and ranked the U.S. 26th among the 28 OECD member countries. Only in Turkey and Mexico do taxes amount to a smaller proportion of GDP.

Moreover, since the late 1960s, the cumulative tax burden of federal, state and local governments on Americans has remained essentially flat: the 1969 rate of 27.6 percent is the same as the rate in 1994. During this same period the unweighted average of OECD member countries increased from 29.0 to 38.4 percent of GDP.

Total Tax Revenue as Percent of Gross Domestic Product
1965 to 1994



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The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 57 **Iowa City, Iowa** **March 1997**

Math is not . . . . . . a spectator sport

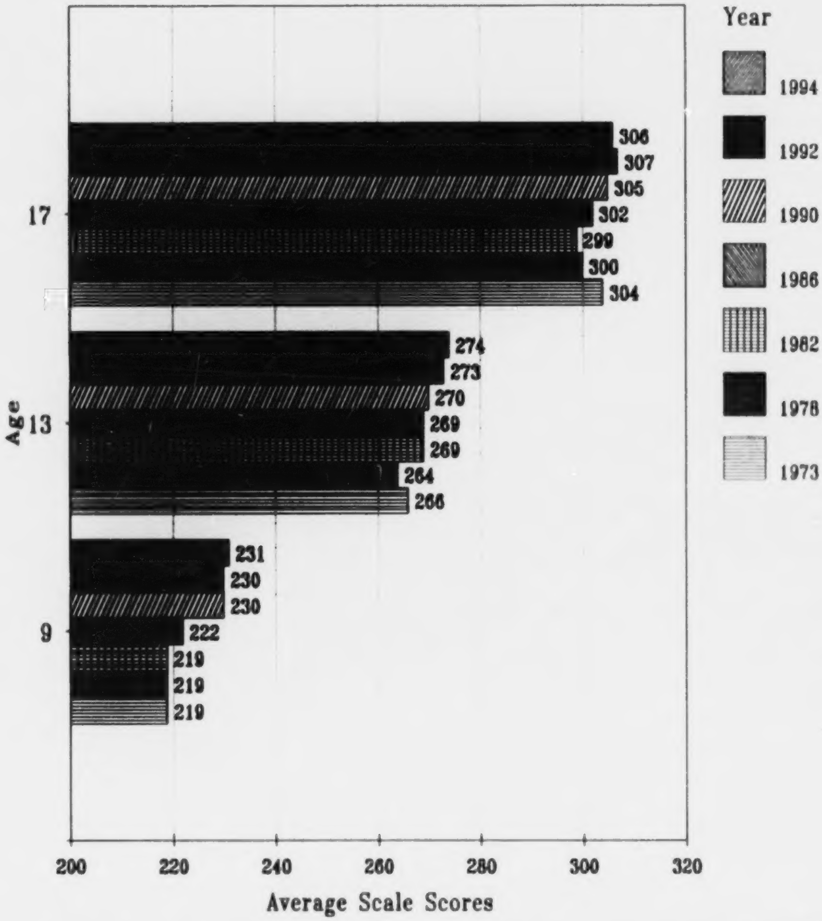
Trends and Patterns in Mathematics Achievement of Students in K-12 Education, 1973 to 1996

Proficiency in mathematics is increasingly important to individuals preparing to live and work in an economy driven by technological change and global competition. Those who survive and thrive in this information age require quantitative fluency to interpret the information they receive, to process information for others and to define and solve problems that make them valuable and rewarded workers. Those who do not have or acquire this quantitative fluency will not have access to the roles and positions leading this economic change.

Here we review trends and patterns in math achievement among students in K-12 education in the U.S. over the last two decades as measured in the National Assessment of Educational Progress (NAEP). The findings from this review are often subtle, usually important and occasionally striking:

- Modest gains in student achievement in math are evident in NAEP results, particularly between 1978 and 1994. These gains are most dramatic among 9 year olds, and smallest among 17 year olds.
- These gains have been uneven between different demographic groups. Between 1973 and 1994, Blacks have shown the greatest gains and whites the smallest gains. At ages 9 and 13, males have shown greater gains in math scores than females, although the reverse is true at age 17.
- Where gaps were once narrowing in some cases they are now widening. The difference between black and white math scores at age

Trends in Average Mathematics Scores for the Nation
National Assessment of Educational Progress
1973 to 1994



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17 narrowed between 1973 and 1990, but has widened since then.

- One of the most striking findings from this analysis is the importance of parental educational attainment, and how the growth in parental educational attainment contributes to gains in math achievement of students in K-12 education.
- Student achievement in math varies widely across the states, with highest math scores in the upper Midwest and lowest in the South.
- Students in some states appear to be making substantial gains in math while students in a few states have slipped backward.

These and many other findings follow from our analyses of the NAEP data. The major findings and our conclusions are reported here for mathematics. Similar analyses of NAEP data, which produced similar findings, were conducted for science, reading and writing. These analyses may be reported in future issues of OPPORTUNITY. Those who can't wait should go back to the sources we examined where the NAEP data are found.

The National Assessment of Educational Progress

The National Assessment of Educational Progress (NAEP) was created in 1969 to measure the progress of students in K-12 education toward higher academic achievement. Students in both public and private schools are assessed in various subjects on a regular basis. These assessments include mathematics, science, reading and writing, as well as other subjects.

Assessment results are reported on a scale of 0 to 500. In addition to the assessments, NAEP collects information on the background demographic and behavioral characteristics of students to assist in interpretation of assessment results.

The NAEP trend data were taken from:

Donahue, P.L., at al. (November 1996.) *NAEP 1994 Trends in Academic Progress.* Prepared by Educational Testing Service under contract with the National Center for Education Statistics.

A parallel and more recent mathematics assessment was initiated in 1990 based on recommendations contained in *Curriculum and Evaluation Standards for School Mathematics* by the National Council of Teachers of Mathematics. The results for states reported here are based on this more recent framework and are not directly comparable to the trend data.

Reese, C.M., Miller, K.E., Mazzeo, J., and Dossey, J.A. (February 1997). *NAEP 1996 Mathematics Report Card for the Nation and the States.* Prepared by Educational Testing Service for the National Center for Education Statistics.

NAEP trend scores in mathematics reflect performance levels, ranging from basic arithmetic to algebra. The scores and their performance expectations are:

Level	Performance
150	Knows some addition and subtraction facts
200	Can add and subtract two-digit numbers and recognize relationships among coins
250	Can add, subtract, multiply and divide using whole numbers, and solve one-step problems
300	Can compute with decimals,

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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fractions, and percents; recognize geometric figures; solve simple equations; and use moderately complex reasoning

350 Can solve multi-step problems and use beginning algebra

Overall Assessment Results

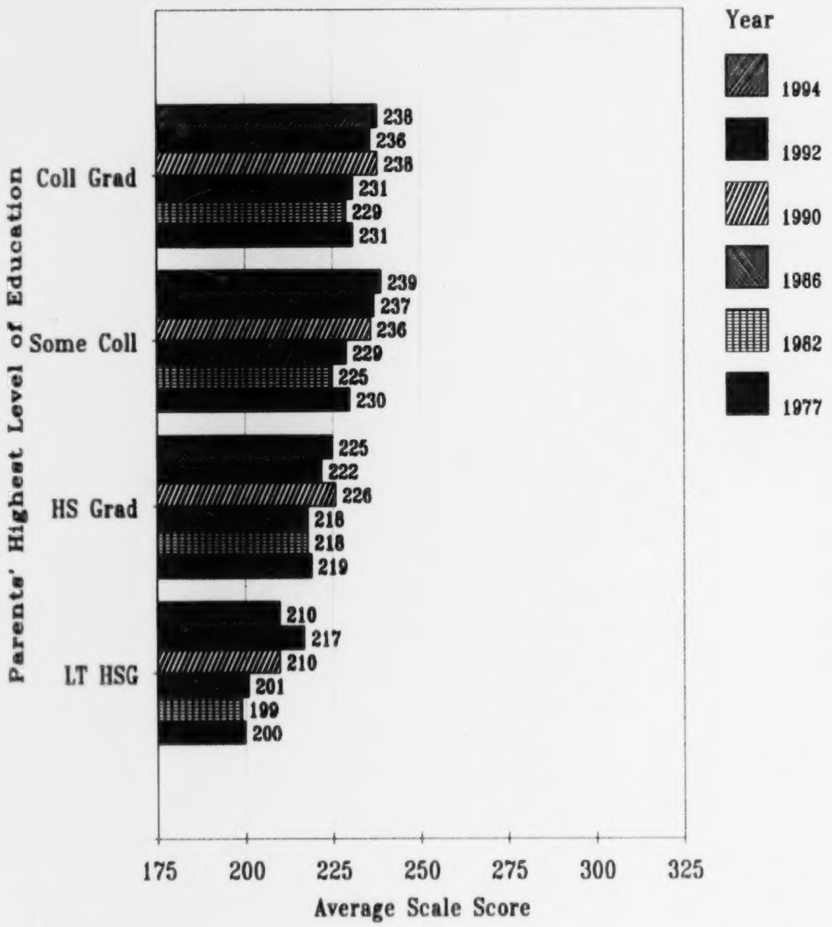
The trend data span the years from 1973 through 1994. As shown in the chart on page 1, the most obvious and important finding is that average scale scores in mathematics increase with age. In the 1994 NAEP mathematics assessment, average scale scores for 9 year olds was 231 (on a scale 0 to 500), 274 for 13 year olds and 306 for 17 year olds.

However, the gains in average scale scores are greater between the ages of 9 and 13 than they are between the ages of 13 and 17. Between 1973 and 1994, the average math score gain between ages 9 and 13 was 45 scale points, or 11.25 points per year. Between the ages of 13 and 17 the average math score gain was 34 scale points, or 8.5 points per year.

Between 1973 and 1994, average math scale scores increased by 12 points for 9 year olds, by 8 points for 13 year olds, and by 2 points for 17 year olds. The trend data indicate that the greatest gains in math have occurred among the youngest tested students and least among high school seniors. Moreover, the large gains among 9 year olds appear to dissipate as cohorts age.

In the main summary of these data accompanied by charts, we focus on results by parents' highest level of education. Results for the NAEP math assessment are also reported by gender, race/ethnicity, type of school, participation in Title I programs, and eligibility for free/reduced-price lunch program.

Average NAEP Mathematics Scores at Age 9 Years
by Parents' Highest Level of Education
1977 to 1994



Parents' Highest Level of Education

NAEP mathematics assessment findings are described here in terms of parents' highest levels of educational attainment.

First, average scale scores increase with parental educational attainment. Among 17 year olds, in 1994 average NAEP mathematics scores increased from 284 among those whose parents' highest level of educational attainment was less than high school graduate, to 295 for those whose parents' highest level of education was high school graduate, to 305 where parents' highest level of education was some college, to 318 for those whose parents' highest level of education was college graduate. The same pattern holds among 9 and 13 years olds.

Second, the disparities in math scores between those from lower levels of parental educational attainment and those whose parents are college graduates increase with age. In 1994 9 years olds whose parents were high school graduates scored 13 points

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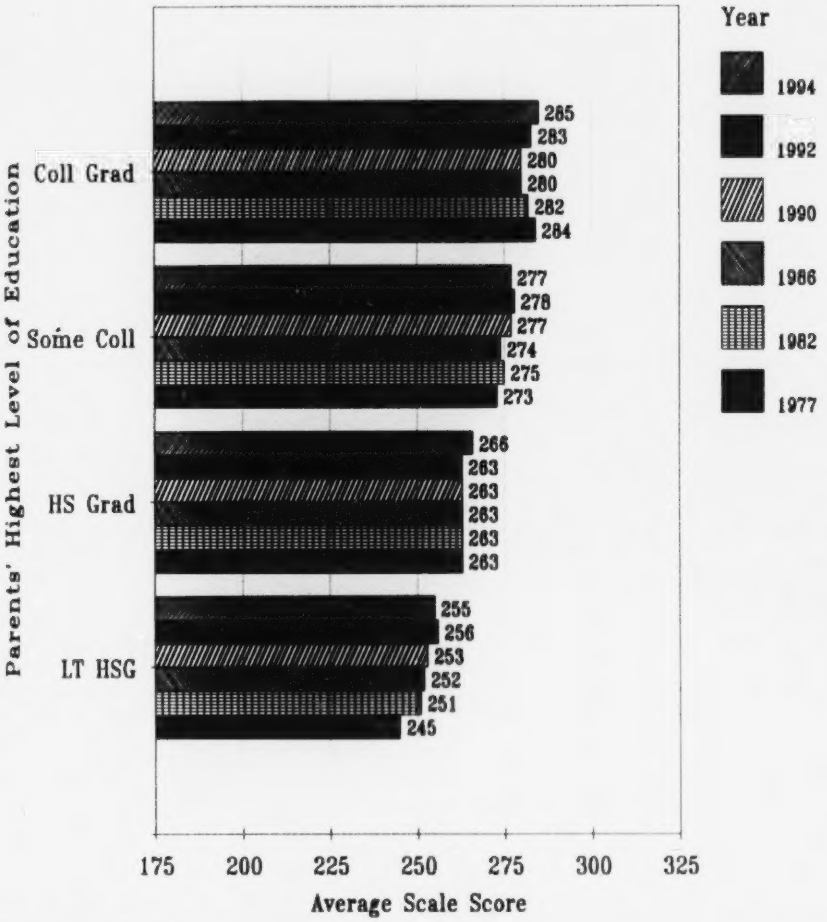
Average NAEP Mathematics Scores at Age 13 Years
by Parents' Highest Level of Education
1977 to 1994



below others who had at least one parent who was a college graduate. By age 13 the gap was 19 points, and by age 17 the gap in math scores had grown to 23 points.

Third, the disparities in math scores for students with different levels of parental educational attainment have not closed during the period between 1977 and 1994. We have compared math scores of students whose parents have high school educated parents with the scores of students with college graduate parents. The results, shown in the chart on page 5, indicate no discernable trend between 1977 and 1994.

The disparity in NAEP mathematics assessment scores across levels of parental educational attainment is both statistically and practically highly significant. In 1994 17 year olds whose parents' highest level of education was less than a high school graduate had scores below 13 year olds whose parents' highest level of education was college graduate. Effectively, those from lowest parental educational levels were about 4 years behind the mathematics performance of those who had at least one parent who was a college graduate.

Similar analyses of NAEP assessment results for science, writing and reading show similar patterns. In nearly every year for nearly each assessment, average scale scores increased with parental educational attainment. Parental education appears to have its greatest impact on assessment scores in science, and least effect in writing.

One reported finding in the NAEP assessment results is particularly important to federal policy objectives and programs. NAEP scores showed little progress in student achievement during the last 25 years for each assessment at each age/grade level when parental educational attainment was controlled. Yet overall, as shown in the chart on page 1, there were increases in the performance of students on the NAEP math test between 1978 and 1994.

This suggests that the gains in student performance on the math assessment are caused by gains in parental educational attainment. In fact, between 1978 and 1994 the proportion of nine year olds reporting that their parents had a high school education or less dropped from 31 to 18 percent, while the number reporting that their parents had at least some education after high school increased from 33 to 52 percent. (The balance reported that they did not know their parents' highest level of education.) Similar trends were reported by 13 and 17 year olds.

This indicates that the gains in student achievement on the NAEP math assessment may be attributed at least in substantial part to gains in parental educational attainment over the period of NAEP testing where parental education data was collected. That is, one effective way to increase K-12 student achievement in math is to increase the educational attainment of their parents. Broadening educational opportunity for today's college students produces important gains in the academic achievements of their children in the next generation. This finding is consistent with findings reported by the Rand Corporation and the National Opinion Research Center based on elaborate studies of longitudinal data files at the National Center for Education Statistics.

Recent Trends by State

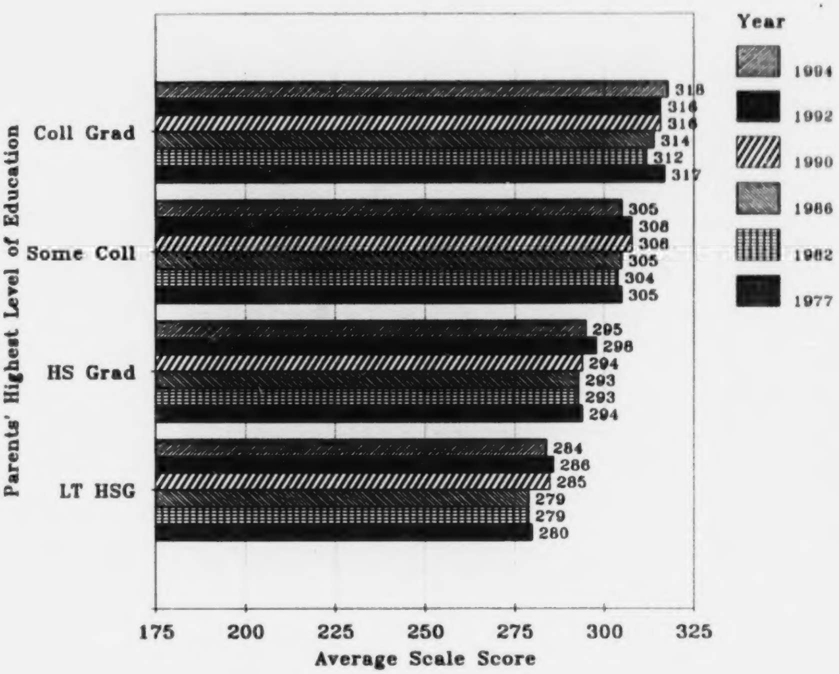
The NAEP mathematics assessments since 1990 have been based on the framework of the National Council of Teachers of Mathematics. This framework measures a mathematics domain (number sense, properties and operations; measurement; geometry and spatial sense; data analysis, statistics and probability; algebra and functions), mathematical abilities (conceptual understanding, procedural knowledge and problem solving) and mathematical power (reasoning, connections and communication).

Here too mathematics performance is measured on a scale of 0 to 500. For each grade level results are reported for three achievement levels:

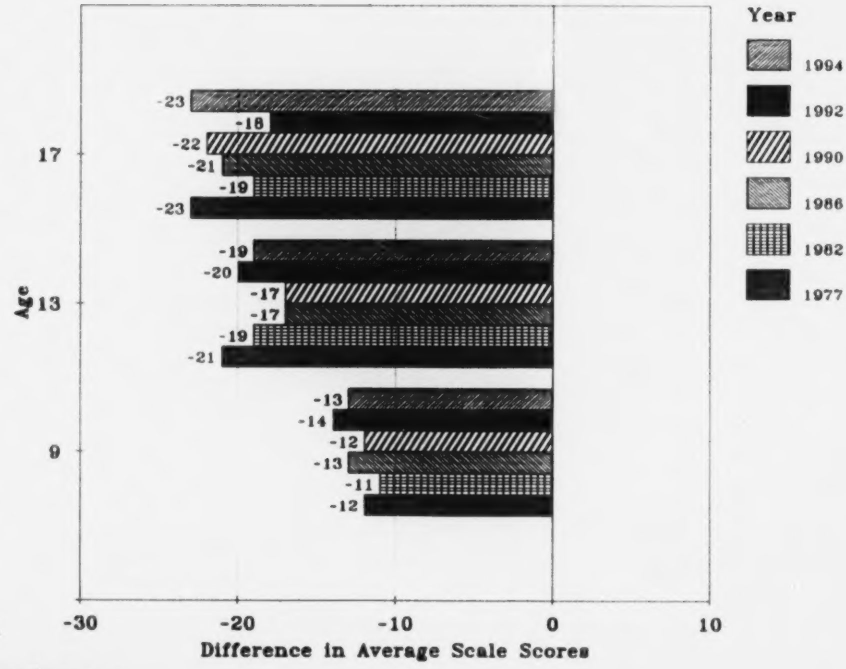
- Basic: partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade level.
- Proficient: solid academic performance. Students show competency over challenging subject-matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.
- Advanced: signifies superior performance.

The NAEP mathematics assessments have been administered in states that have chosen to participate in the state-level assessments offered in 1990, 1992 and 1996. Our report is based mainly on 1996 state-level math

Average NAEP Mathematics Scores at Age 17 Years by Parents' Highest Level of Education 1977 to 1994



Trends in Differences in Average Math Scores between Children of High School- and College-Educated Parents 1977 to 1994



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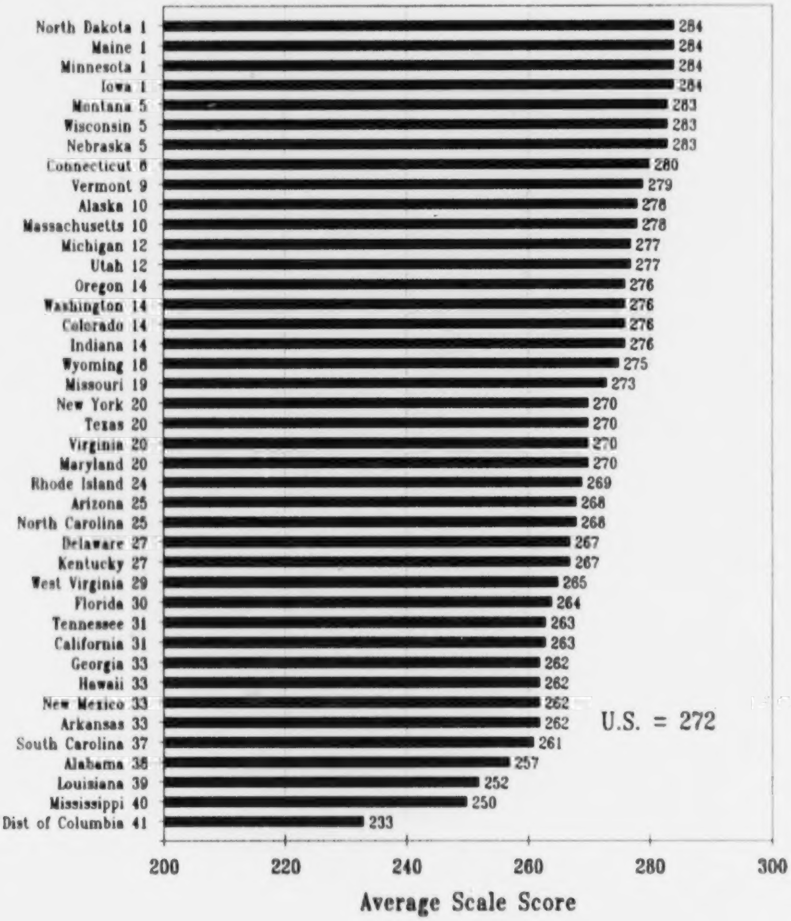


Average Proficiency in Mathematics by State
for 8th Graders in Public Schools
1996

assessments, with comparisons to 1990 for those states that chose to participate in both years. Because of the volume of data, this report is limited to eighth graders (13 year olds).

The above chart summarizes average NAEP mathematics scale scores for the 40 states plus District of Columbia that chose to participate in the 1996 state-level assessment. Mean scores ranged from 233 in the **District of Columbia** to 284 in **North Dakota, Maine, Minnesota** and **Iowa**.

These data show a very strong geographical pattern: average math scores tend to be highest in those states that touch the northern border of the U.S., especially in the north-central part of the country. The scores tend to be lowest in the southern-most states, especially south-central.

In fact, when we tested the correlation between mean NAEP math scores for eighth graders with the mean January temperature in the largest city in each state (often the state capital), the correlation was -.80. This means that as temperature goes down, average NAEP math scores go up, and that as temperature goes up average NAEP math scores go down. Each 1°F increase in temperature decreases average NAEP math scores by 0.6 scale points, and vice versa.

This correlation is somewhat short of a perfect correlation (which would be 1.00). But it does suggest that whatever is correlated with average January temperatures has a very strong influence on student achievement in mathematics.

Thirty states and the District of Columbia chose to participate in both the 1990 and 1996 NAEP mathematics assessments. This enables the measurement of change in average mathematics performance during this six year period in those 31 states.

The chart on the following page shows the change in the average NAEP math score for eighth graders in public schools by state between 1990 and 1996. For all states/jurisdictions, the average score increased, and by an average of 9 scale points.

For the states participating in both years, the increase ranged from 17 points in **North Carolina** to 1 point in the **District of Columbia.** North Carolina's strong gain occurred both between 1990 and 1992 testing, and again between 1992 and 1996 testing. The District of Columbia's small gain between 1990 and 1996 actually obscures a loss of 2 points between 1992 and 1996--the only jurisdiction where average NAEP math scores declined for eighth graders between 1992 and 1996.

Here, measuring changes between 1990 and 1996, the strong geographic pattern breaks down. States with the largest gains come from the four borders of the U.S.: east, north, south and west, respectively. The success of efforts to improve math education are broadly distributed.

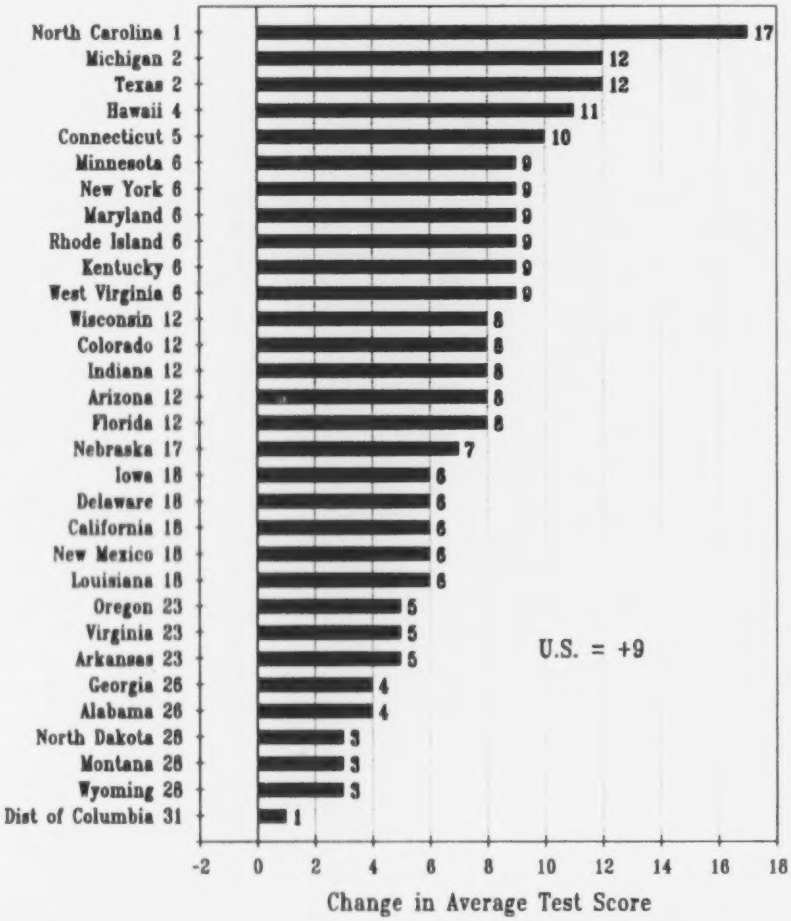
Another way of comparing the performance in math of students is by comparing the proportion of different groupings of students that perform above a certain level. Here we choose the proficient level:

> *Eighth-grade students performing at the proficient level should apply mathematical concepts and procedures consistently to complex problems in the five NAEP content strands.*

For the U.S. in 1996, just 24 percent of all eighth graders were proficient in math (scored 299 or above).

- By regions the proportions were 29 percent in the central states, 27 percent in the northeast, 22 percent in the west, and 18 percent in the southeast.
- By gender, 25 percent of males were proficient and 23 percent of females reached this level.
- By race/ethnicity, 31 percent of whites were proficient, compared to 13 percent for American Indians, 9 percent for Hispanics and 4 percent for blacks.
- By parents' highest education level, 35 percent of those who had at least one parent who was a college graduate were proficient, compared to 26 percent of those where a parent had some education after high school, 13 percent of those whose parent had graduated from high school, and 8 percent of those whose parent had not finished high school.
- By type of school, the proportion of eight graders who were proficient in math was 23 percent in public schools, 32 percent in Catholic schools, and 36 percent in other nonpublic schools.
- By Title I program participation, 6 percent of those who participated in Title I programs were proficient compared to 26 percent for non-participants.
- By free/reduced-price lunch program eligibility, 8 percent of those who were eligible were proficient in math, compared to 30 percent of those who were not eligible.

Change in Average Proficiency in Mathematics for 8th Grades in Public Schools by State 1990 to 1996



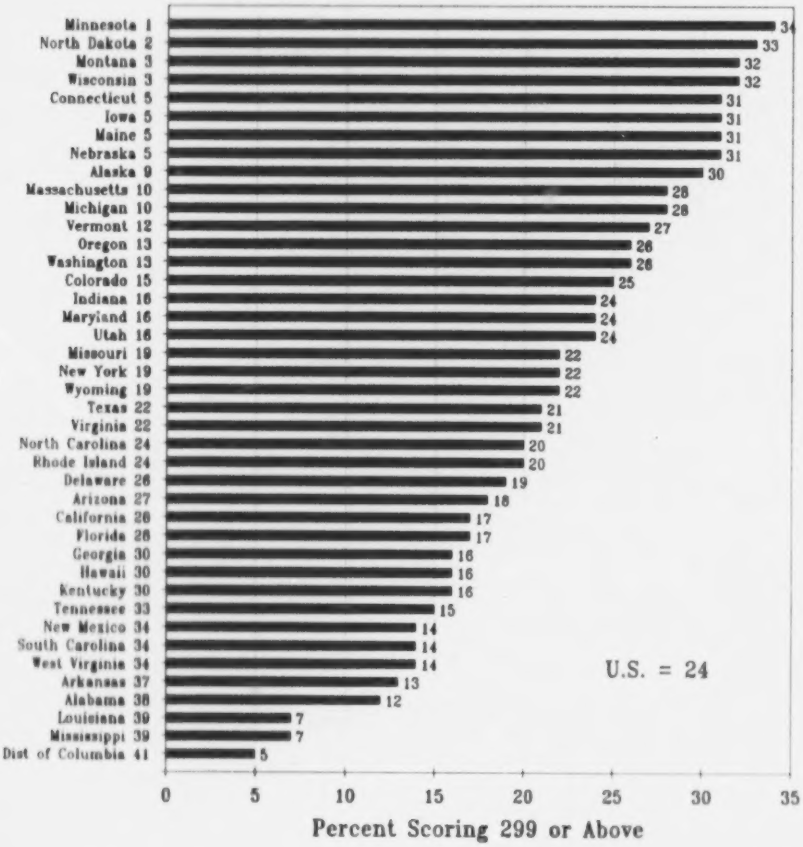
By state, the proportion of eighth graders in public schools that were proficient in math ranged from 5 percent in the **District of Columbia** to 34 percent in **Minnesota**. These data are shown in the chart on the following page for the 40 states plus the District of Columbia.

Summary and Conclusions

This brief analysis of mathematics performance of students in K-12 education is based on two very important environmental conditions guiding the development of education.

First, education is growing in importance to the determination of both private and social welfare. The forces of technology and global competition require the U.S. to expand its educational investments in youth to prepare a labor force able to out-produce workers elsewhere in the

Percent of 8th Graders in Public Schools Scoring
At or Above Proficient on NAEP Mathematics Test by State
1996



world. Failure to do so will cripple the nation's leadership role and our private and social living standards.

Second, mathematical literacy is a fundamental component of the educational effort necessary to prepare young people for the labor force roles of the future. This literacy is neither the only skill required, nor need everyone be expert. But the general level of mathematical literacy of the labor force will significantly determine its dynamic, productive potential, and from that the living standards we will live at individually and as a society.

By international standards, school children in the U.S. do not perform well in mathematics. At age 9, U.S. students' average math proficiency was below that of the other five countries participating in the International Assessment of Educational Progress. At age 13, U.S. school children outscored only those from Spain. The school children of today are the workers in the labor force of the future

Against this backdrop, the National Assessment of Educational Progress has been measuring the performance of students in K-12 education in mathematics since 1973.

Overall, trends show gains in the performance of students in mathematics. These gains have been greatest among nine year olds, and least among seventeen year olds. Until a few years ago, the gap between blacks and whites had been closing, but since the 1986-1990 period, the performance gaps have been widening. Similar trends hold for Hispanic school children. Younger girls seem to be falling farther behind boys their age in mathematics, although the gap is closing for high school seniors.

Much of this analysis has focused on students from limited parental educational attainment backgrounds. Here the results are decidedly mixed. The bad news is that students from families with less well educated parents perform well below those whose parents are college educated. The performance gap between these groups of students is wide, it grows with age, and it shows no sign of narrowing between 1977 and 1994. By the senior year of high school, students whose parents' highest level of education is less than high school perform as well as eighth graders whose parents have graduated from college--they are four years behind.

The good news--and an important finding for public policy--is that fewer students are reporting parents with lower levels of educational attainment, and more students are reporting greater levels of parental education over the period of the NAEP math assessment. This fact alone appears to explain much, or most, of the gains in math performance of school children between 1977 and 1994. If this finding is substantiated in further study, then an important social benefit of broadening educational opportunities today will accrue to the next generation of American children. This finding is not trivial. But it could be lost in short-sighted public policy-making that is now focused on rationing educational opportunity for today's college-age students.

Institutional Graduation Rates by Pre-college Characteristics of Students

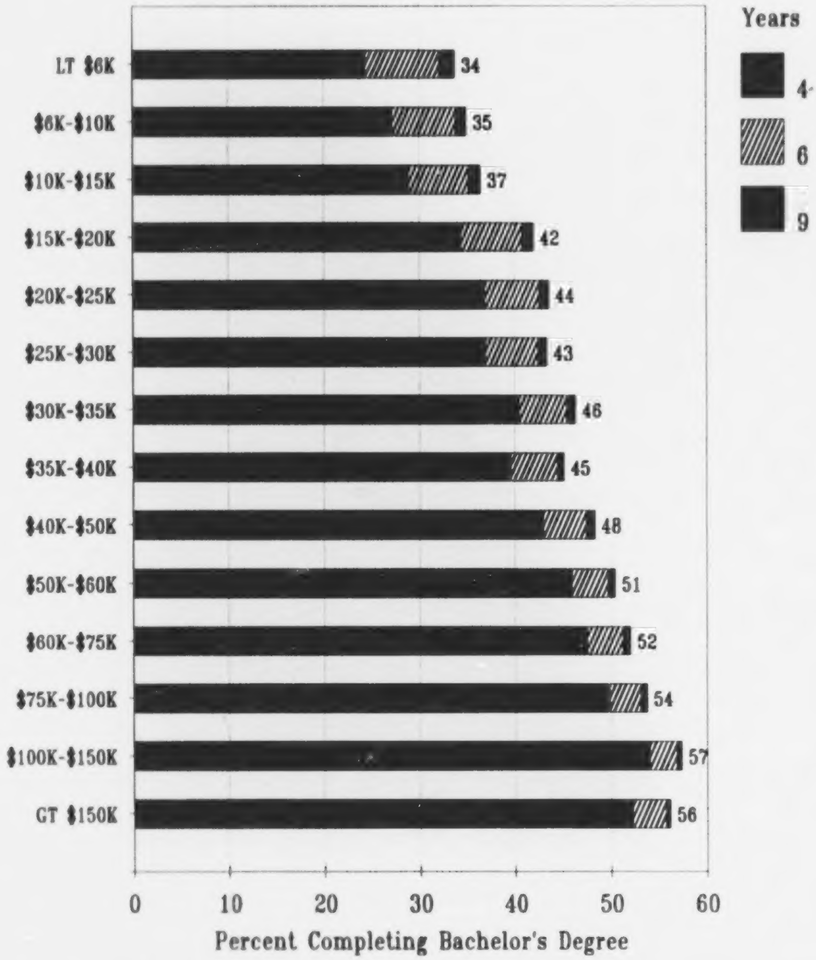
Institutions vary widely in the rates at which they graduate those they admit. In last fall's ranking of *America's Best Colleges* by U.S. News, reported institutional six-year graduation rates ranged from 97 percent at Harvard University to 9 percent at United States International University.

Most of this variation in institutional graduation rates is directly attributable to the characteristics of students admitted. Some additional portion of this variation is attributable to circumstances of each institution, such as location in an urban setting. Finally, some portion of institutional graduation rates is attributable to efforts made by institutions to provide supportive environments for student success on their campuses.

Here we describe institutional graduation rates in terms of the characteristics of students that they bring with them to the colleges and universities where they enroll. These descriptors include demographic characteristics (gender, race/ethnicity), family characteristics (fathers' education, parental income), and academic characteristics (high school grades, college admissions test scores) that have been reported previously. Each is shown to describe large variations in the rates at which admitted full-time freshmen receive bachelor's degrees from the colleges to which they were admitted. Each descriptor is also shown to help explain how much time it takes students to earn their bachelor's degrees from the college to which they were admitted as freshmen.

The results of this analysis are not surprising because they are consistent with the long history of research and available data on degree-completion in higher education.

Institutional Graduation Rates by Parental Income
1985 Freshman Cohort



- Females graduate from the college to which they were originally admitted at higher rates than do males. Of those that graduate, females are also more likely to graduate sooner than males.
- Asians and whites graduate from college at higher rates than do blacks, American Indians and Hispanics. They also graduate sooner.
- Students from high income families graduate from college at higher rates than do students from low income families. They too graduate sooner.
- Students whose fathers have the most formal education graduate from college at higher rates and sooner than do students whose fathers have less formal education.
- As previously reported, students with high average high school grades and high SAT test scores

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graduate at higher rates and sooner than do students with lower high school grades and/or college admissions test scores.

In this analysis we summarize these data. These data help describe the wide range of student success--measured by graduation--in higher education *in terms of the characteristics students bring with them when they enter higher education.* These data suggest who is best served by the present array of offerings of higher educational opportunities in America, and who is least served.

Next month's issue of OPPORTUNITY will be devoted to an institution-by-institution assessment of institutional graduation rates. Controlling for academic background and environmental constraints on student success, we will rank nearly all public and private bachelor degree-granting colleges and universities according to their success (or failure) to graduate the students they admit.

The Data

The analyses reported here were developed from a major study of degree attainment rates conducted by the Higher Education Research Institute of the University of California at Los Angeles. Part of the data reported here were published by the HERI in a previous report.

Astin, A.W., Tsui, L., and Avalos, J. (1996). *Degree Attainment Rates at American Colleges and Universities: Effects of Race, Gender, and Institutional Type.* Los Angeles: Higher Education Research Institute, UCLA.

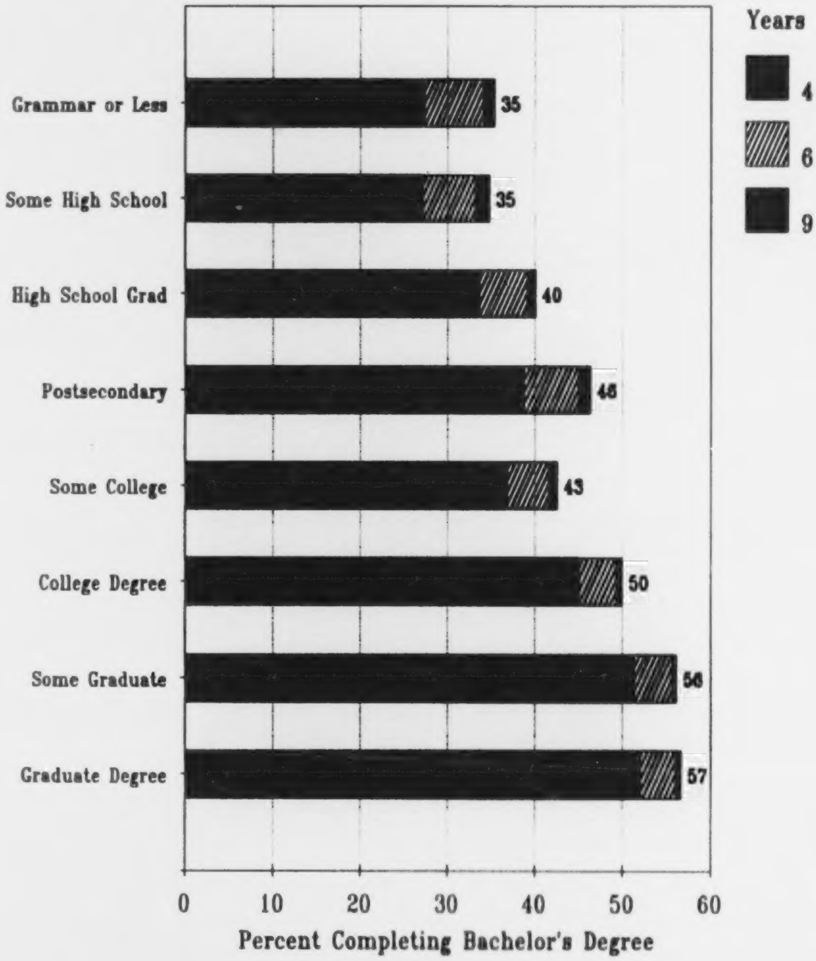
In addition, some of the data reported here were developed in subsequent analyses of the data file created as a part of the HERI study. We are grateful to Sarah Parrott of the Higher Education Research Institute at UCLA for her efforts to retrieve additional data on institutional graduation rates by father's education and by parental income.

Institutional Graduation Rates and Time to Degree

Of the 82,494 1985 first-time full-time college freshmen entering four-year colleges and universities in the fall of 1985, 39.9 percent had received their bachelor's degrees within four years from the institution they originally entered, 44.9 percent after six years, and 45.7 percent after nine years. Of those receiving bachelor's degrees in this study, about 87 percent did so within four years of entering college.

Note that these are *institutional* graduation rates. This does not include students who may have started at one college and graduated from another. However, data from the 1995 Current Population Survey provide an alternative perspective on

Institutional Graduation Rates by Fathers Education
1985 Freshman Cohort



Institutional Graduation Rates
by Pre-college Characteristics of Students
1985 Freshman Cohort

Characteristic	Unweighted N	4 Years	6 Years	9 Years	Percent of Graduates Graduating in 4 Years
Total	82,494	39.9%	44.9%	45.7%	87.3%
Gender					
Males		36.8	42.2	43.0	85.6
Females		43.2	47.8	48.6	88.9
Race/Ethnicity					
White		42.7	46.8	47.3	90.3
African-American		19.4	31.2	33.9	57.2
American Indian		22.9	30.7	33.2	69.0
Asian American		50.2	56.6	57.6	87.2
Mexican American		30.5	38.3	39.5	77.2
Puerto Rican		26.8	34.6	36.9	72.6
Other		34.4	41.3	43.7	78.7
Average High School Grade					
A, A+	12,518	62.4	66.3	66.7	93.6
A-	14,703	52.4	57.5	58.1	90.2
B+	18,104	45.2	50.2	51.1	88.5
B	17,666	34.5	39.7	40.7	84.8
B-	8,195	26.8	31.9	32.8	81.7
C+	5,096	18.4	24.2	25.6	71.9
C or less	2,649	11.9	16.7	17.7	67.2
	78,931				
SAT Verbal + Math					
1300+	4321	73.1	76.0	76.5	95.6
1150-1299	9314	62.8	67.1	67.5	93.0
1000-1149	13,821	52.6	57.2	57.7	91.2
850-999	13,772	41.4	46.5	47.3	87.5
700-849	8396	30.3	35.8	36.9	82.1
Less than 700	3693	19.3	27.4	28.7	67.2
	53,317				
Fathers' Education					
Grammar or less	2124	27.3	34.2	35.4	77.1
Some high school	4022	27.1	33.3	34.8	77.9
High school graduate	13,690	33.6	39.2	40.1	83.8
Postsecondary	2937	38.7	45.1	46.4	83.4
Some college	9386	36.8	41.6	42.6	86.4
College degree	15,743	45.0	49.3	50.0	90.0
Some graduate	2803	51.3	55.8	56.2	91.3
Graduate degree	18,793	52.0	56.1	56.7	91.7
	69,498				

Institutional Graduation Rates
by Pre-college Characteristics of Students
1985 Freshman Cohort
(continued)

Characteristic	Unweighted N	4 Years	6 Years	9 Years	Percent of Graduates Graduating in 4 Years
Parents' Income					
Less than $6000	1916	24.3	32.2	33.8	71.9
$6000-9999	1925	27.1	33.3	34.4	78.8
$10,000-14,999	3517	28.8	35.2	36.5	78.9
$15,000-19,999	3769	34.3	40.8	42.0	81.7
$20,000-24,999	4859	36.8	42.6	43.6	84.4
$25,000-29,999	5170	36.9	42.5	43.4	85.0
$30,000-34,999	6872	40.4	45.5	46.4	87.1
$35,000-39,999	6445	39.5	44.5	45.2	87.4
$40,000-49,999	8298	42.9	47.5	48.4	88.6
$50,000-59,999	7775	45.9	49.8	50.5	90.9
$60,000-74,999	6535	47.5	51.3	52.1	91.2
$75,000-99,999	4575	49.8	53.2	53.8	92.6
$100,000-149,999	3835	54.0	56.9	57.4	94.1
$150,000 or more	4007	52.2	55.8	56.2	92.9
	69,498				
Institutional Type and Control					
Public University	20,509	34.4	39.9	40.8	84.3
Private University	16,664	69.2	71.5	72.0	96.1
Public 4-Year College	11,708	30.6	37.3	38.4	79.7
Nonsectarian 4-Year College	17,541	47.1	50.3	50.8	92.7
Catholic 4-Year College	5755	49.9	53.1	55.5	89.9
Protestant 4-Year College	7637	42.7	45.8	46.3	92.2
	79,814				

these numbers. In March of 1995 the Census Bureau found that among 10.489 million 25 to 29 year olds who had enrolled in college, 4.789 million had a bachelor's degree or more. This was 45.7 percent of all 25 to 29 year olds with at least some college--a proportion identical to the 45.7 percent found in the HERI study. If these proportions are in fact so close, then quite likely the HERI data accurately describe graduation rates for different segments of the Census population as well.

Race/ethnicity. After nine years, Asian Americans at 57.6 percent and whites at 47.3 percent had the highest institutional graduation rates. Asian American IGRs ranged from 39.2 percent from public universities, to 78.1 percent from private universities. Institutional graduation rates for whites ranged from 40.6 percent from public 4-year colleges, to 72.0 percent from private universities.

American Indians at 33.2 percent and African-Americans at 33.9 percent had the lowest institutional graduation rates. American Indians' IGRs ranged from 27.7 percent from public 4-year colleges to 61.3 from Catholic 4-year colleges. African-American IGRs ranged from 29.9 percent at public universities to 62.0 percent from private universities.

Between these extreme were the two Hispanic groups: Mexican-Americans and Puerto Ricans. While the overall Mexican-American IGR was 39.5 percent, it ranged from 29.1 percent at public universities to 71.6 percent at private universities. Puerto Rican IGRs ranged from 13.4 percent at public 4-year colleges to 67.7 percent at private universities.

Note in the above data that private universities are generally the most academically selective and enroll students most likely to succeed in college anywhere. Less selective public institutions enroll students who are least likely to succeed anywhere.

Nevertheless, as our previous analysis of ACT institutional graduation rate data have shown, at any level of academic selectivity private institution graduation rates average 4 to 15 percent greater than do those of public institutions (see March 1996 OPPORTUNITY).

Gender. Nine year institutional graduation rates were 43.0 percent for males and 48.6 percent for females. Of those who graduated from the institution where they enrolled as freshmen, 85.6 percent of the males graduated in four years compared to 88.9 percent of the females.

Father's education. Nine-year institutional graduation rates were also strongly correlated with father's educational attainment. IGRs ranged from 34.8 percent among those whose fathers had not completed high school, to 56.7 percent among those whose fathers held a graduate degree. Moreover, time-to-degree was least among those whose fathers had the most education, and longest among those whose fathers had the least formal education.

Parents' income. Nine-year institutional graduation rates ranged from 33.8 percent for those from families where parental incomes were less than $6000 (in 1985 dollars), to 57.4 percent for those whose parental incomes were between $100,000 and $149,999 (in 1985). Of those who graduated from their original institution, the proportion graduating in four years ranged from 71.9 percent of those whose parents earned less than $6000 in 1985, to 94.1 percent of those whose parents had incomes of between $100,000 and $149,999 in 1985.

Summary and Conclusions

Institutional graduation rates are determined by several factors. Foremost among these are the pre-college characteristics of students including their academic, demographic and family backgrounds.

These graduation rates are also influenced by environmental factors both internal to the institution (over which the institution has control) and external to the institution (over which the institution has little or no control). The institutional environmental factors identified in previous research include the degree to which the student is academically and socially integrated into the life of the institution. The external environmental factors include its location (urban/rural) and control (public/private).

This analysis of a major data file at the Higher Education Research Institute at UCLA has focused on the pre-college characteristics of students that describe degrees of success in bachelor's degree attainment at the institutional of original matriculation. The traditional academic characteristics used to discriminate between applicants for admission--high school grades and college admissions test scores--have great explanatory power with respect to institutional graduation rates.

But so too do race/ethnicity, father's education and parent's income. These pre-college characteristics are not used to discriminate between applicants for admission. Rather, they are often treated as disadvantages over which the student has no control, and for which public policy interventions to "level the playing field" are often deemed appropriate.

- Where family income is limited, government programs of financial aid serve to make college affordable.
- For students from families with limited parental educations, federal TRIO programs (and several state and community programs) provide targeted counseling and tutorial assistance to prepare students for college and support them when they are enrolled there.
- For students born into minority groups traditionally under-represented in higher education, civil rights law prevent race and ethnicity as bases for excluding students from higher education.

Our public and institutional policies regarding discrimination between different groupings of the population seem, at best, to be highly confused. Some student characteristics that predict success in college are considered legitimate bases for discrimination, while others that are closely related to these same characteristics are prevented or at least addressed as handicaps in the path to bachelor's degree attainment.

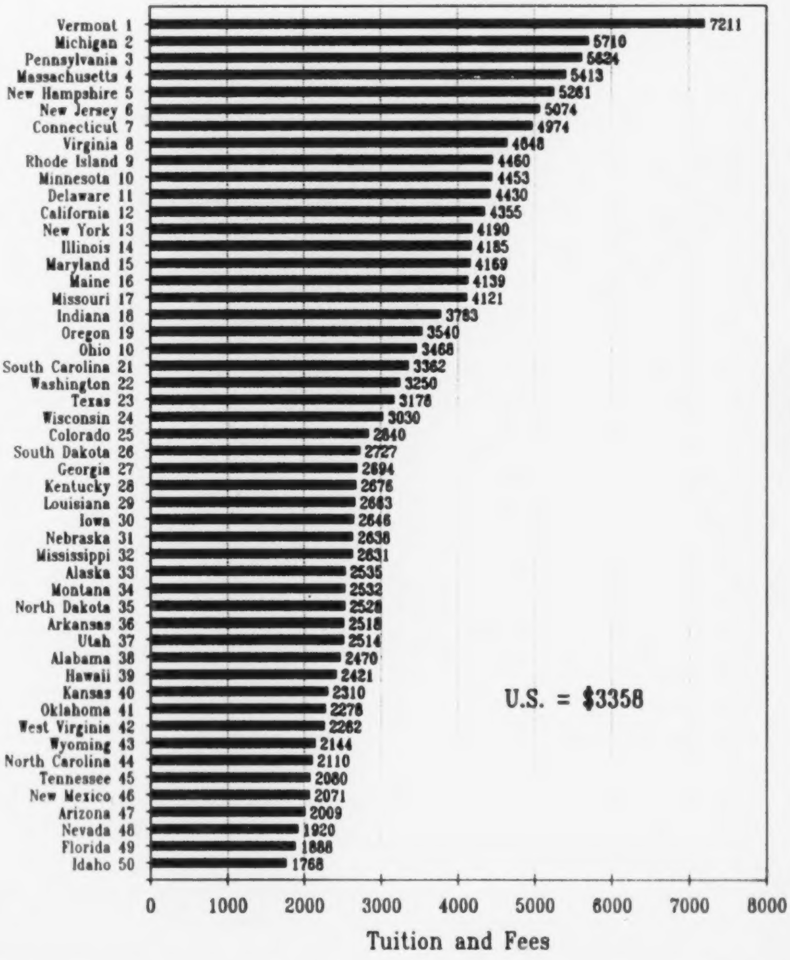
This confusion seems to result from dual but not necessarily conflicting missions for education. Should we concentrate social investment on an elite needed to govern and manage social institutions? Or should we extend educational opportunity to all to raise social welfare for the broadest possible representation of the whole population?

We try to do both, as Thomas Jefferson would have us do. But in fact we do a far better job of educating those born into social elites for leadership than we do adding value through higher education to others who need the benefits of higher education to fully participate and contribute within our social structure.

And for that failure we pay ever steeper costs so clear in American social pathologies.

Public University Tuition and Fee Increases Moderating in 1990s, but Still Exceed Inflation

State Flagship University Resident Undergraduate Tuition and Fees, FY1997



In recent years Congress has held several public hearings on college attendance costs. Several members of Congress have expressed concerns about the large increases in college tuition and fees. Quite correctly, Congress has observed that college cost increases have greatly exceeded increases in family resources to pay them. A very few in Congress have even observed that these cost increases have exceeded increases in the Pell Grant maximum award. The Pell maximum, which is currently funded at $2470, is authorized in the Higher Education Act at $4300 for the 1996-97 academic year.

These expressions of federal concern have been answered by near total silence from state government officials whose actions have directly caused this tuition run-up in public higher education. Since about 1980 state government officials have steadily diverted state resources from higher education to corrections, Medicaid and--more recently--tax cuts. The reduction in state financial support for higher education has caused public universities and colleges to increase tuition and fee charges to students to offset the loss of state appropriations. Public institutional leadership has not yet figured out how to deliver capacity and quality in colleges and universities with steadily declining state financial support and increasing political hot air. Instead they have raised tuition and fee charges to students to offset this loss of state funding for their operations.

Here we update our previous analyses of public university tuition and fee charges to state resident undergraduate students. What our analysis finds is:

- State flagship university undergraduate tuition and fees charges average $3358 nationally for the 1996-97 academic year. This is up by 5.4 percent over the average of $3187 for 1995-96, and $3019 for 1994-95.
- By state, resident undergraduate tuition and fees range from $1768 in Idaho to $7211 in Vermont.
- Since 1980, public flagship university undergraduate tuition and fee increases have exceeded the annual inflation rate by an average of 4.6 percent per year.
- The rate of annual increase in tuition and fees--corrected for inflation--has moderated steadily since 1991. This moderation in annual increases corresponds directly to improvement in state

appropriations for higher education during the 1990s.

The following analysis will eschew further ridicule of the public policy hypocrisy shown in the expressions of elected officials about concern for escalating college attendance costs. Beyond this introduction we will not again mention the cost escalation to students that results from shifting federal student financial aid from grants to loans, nor from failing to fund the Pell Grant maximum award at its authorized levels.

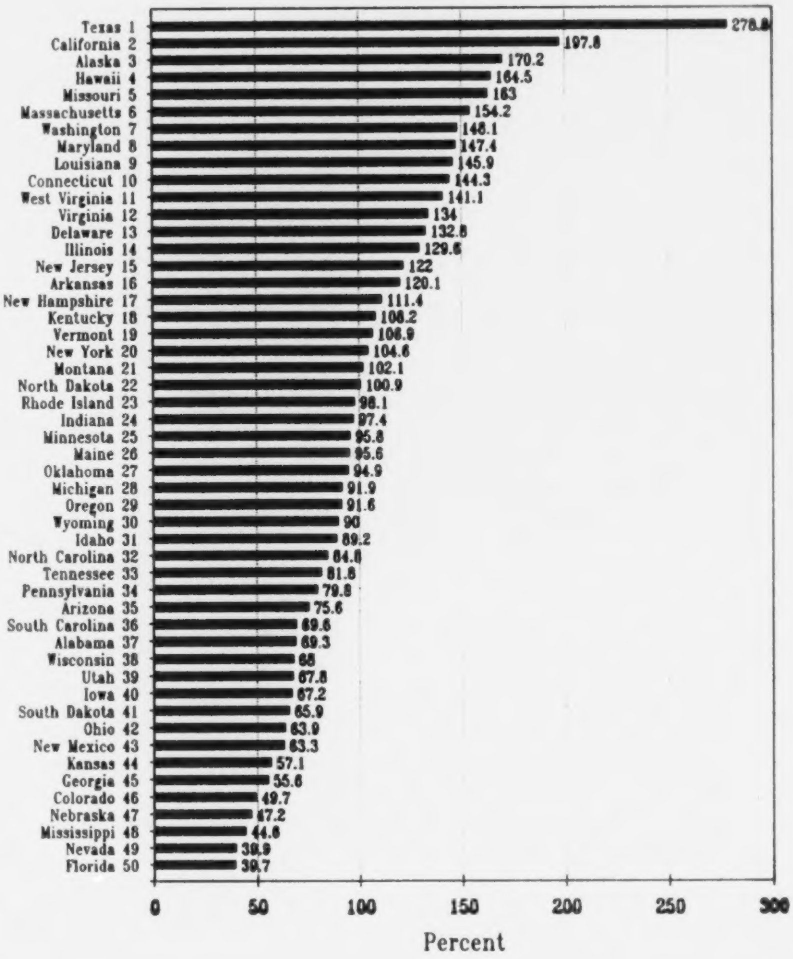
Moreover, except by what the reader may choose to read into the following data, we will not again suggest that state officials have chosen to shift the costs of higher education from taxpayers to students thus causing the price run-up in public higher education, nor that states have largely walked away from responsibility for the consequences of these price increases for the financially needy citizens of their own states.

The Data

The tuition and fee data used in this analysis were collected by Kathy Raudenbush of the State of Washington Higher Education Coordinating Board. The Washington HECB uses these data for comparative purposes in setting tuitions of Washington public institutions. They are widely used by others studying tuition issues as well. These data have been collected in an annual survey of the states and reported each year since 1968-69.

Washington State Higher Education Coordinating Board. (January 1997). *1996-97 Tuition and Fee Rates, A National Comparison.* Olympia, Washington.

Change in State Flagship University Tuition and Fees
FY1981 to FY1997



Data are reported by the Washington HECB for three types of institutions: universities (called here "flagship" campuses), colleges and state universities, and community colleges. Tuition and fee data are reported for state residents and nonresidents, for undergraduates and graduate students, and for certain postbaccalaureate professional fields.

Our analysis of these data focuses primarily on state resident undergraduate students, mainly at the state flagship campus.

Resident Undergraduate Tuition and Fees

The chart on page 14 shows resident undergraduate tuition and fees at state flagship university campuses for the current 1996-97 academic year. The average was $3358, the median was $2784, and the range was from $1768 at the **University of Idaho** to $7211 at the **University of Vermont**.

Nonresident undergraduate tuition and fees averaged $9504 at state flagship universities in FY1997. The range

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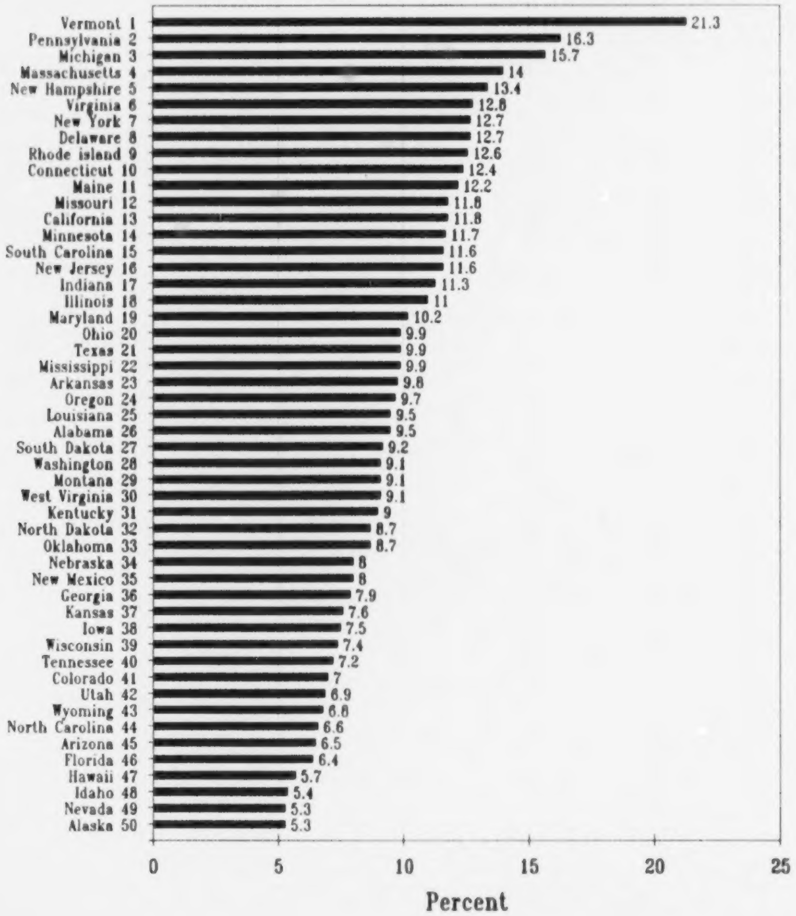
was from $5476 at the **University of Mississippi/Oxford** to $17,916 at the **University of Michigan/Ann Arbor**. The premium nonresident undergraduates paid over state residents averaged $6146 in FY1997.

Resident undergraduate tuition and fees at state colleges and regional universities average $2645 for the current 1996-97 academic year. The range is from $1514 in **New Mexico** to $4248 in **Vermont.** Nonresident tuition and fees in these institutions average $6924, with a range from $3662 in **Nebraska** to $9714 in **Virginia**.

Public community college tuition and fees for residents average $1457 in 1996-97, with a range of from $390 in **California** to $2880 in **Vermont**. Nonresident tuition and fees in community colleges averages $4105, with a range of from $1459 in **Nebraska** to $7340 in **Massachusetts**.

An alternative way of measuring resident undergraduate tuition and fees at state flagship university campuses is to divide tuition and fees by median state household income. This is a rough measure of tuition effort--rough especially because relatively high income families send their children to state flagship campuses. Despite this limitation, we have calculated the this measure of tuition effort and the results are shown on this page. In FY1997 flagship tuition and fees as a percent of CY1995 median state household income ranged from 5.3 percent in **Alaska** to 21.3 percent in **Vermont**. The average for all states was 9.85 percent, and the median was 9.5 percent.

State Flagship University Tuition and Fees
as a Proportion of Median State Household Income
FY1997



Changes in Tuition and Fees

The 1996-97 tuition and fee rate of $3358 for undergraduates at state flagship campuses was up 5.4 percent over the rate of $3187 for 1995-96. This follows a pattern of steadily declining rates of annual increases: 7.8 percent in FY1994 over FY1993, 6.4 percent in FY1995, 5.6 percent in FY1996 and 5.4 percent in FY1997.

However, these annual increases in tuition and fees have consistently outpaced inflation since 1980. As shown in the paired charts on page 17, three distinct eras are evident between 1969 and 1996.

- The first era spans 1969 through 1972 during which annual increases in tuition and fees averaged 10.1 percent, inflation averaged 4.8 percent, and thus tuition and fee increases exceeded inflation by an average of 5.7 percent each year.
- Then, from 1973 through 1980, the average annual increase in tuition and fees was 6.2 percent while inflation averaged 8.0 percent. Thus, tuition and fee increases averaged 1.8 percent less than inflation, or declined in constant dollars for eight years.
- Finally, from 1981 through 1996, tuition and fee increases averaged 8.7 percent while inflation averaged 4.1 percent. Thus the annual increase in tuition and fees exceeded the annual inflation rate

by an average of 4.6 percent each year.

In this context, the 1996-97 tuition increase by 2.4 percent represents a substantial slowing in the rate of real tuition increases since 1980. In fact the 1996 rate is the lowest since 1980.

This slowing in the real annual rate of tuition and fee increases in the 1990s is related to increasing state appropriations for higher education during this same period, as reported in the January issue of OPPORTUNITY. Except for the five year period between FY1982 and FY1986, the last twenty-five years have shown patterns of depressed state appropriations accompanied by large tuition increases. When state appropriations recovered, tuition increases moderated.

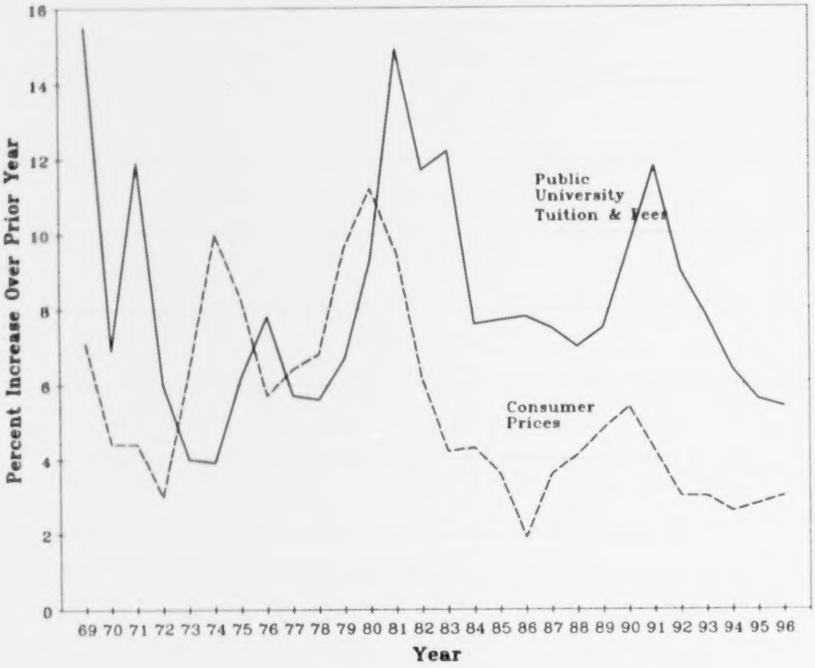
The FY1982-FY1986 period is best characterized as a period of unusually large state appropriation *and* large increases in tuition and fee charges to students, but well above inflation rates. During this period funding for public higher education was greatly enriched. In contrast to this pattern, the large tuition and fee increases of the early 1990s were caused by substantial reductions in state funding of public higher education.

Shifting Costs to Students

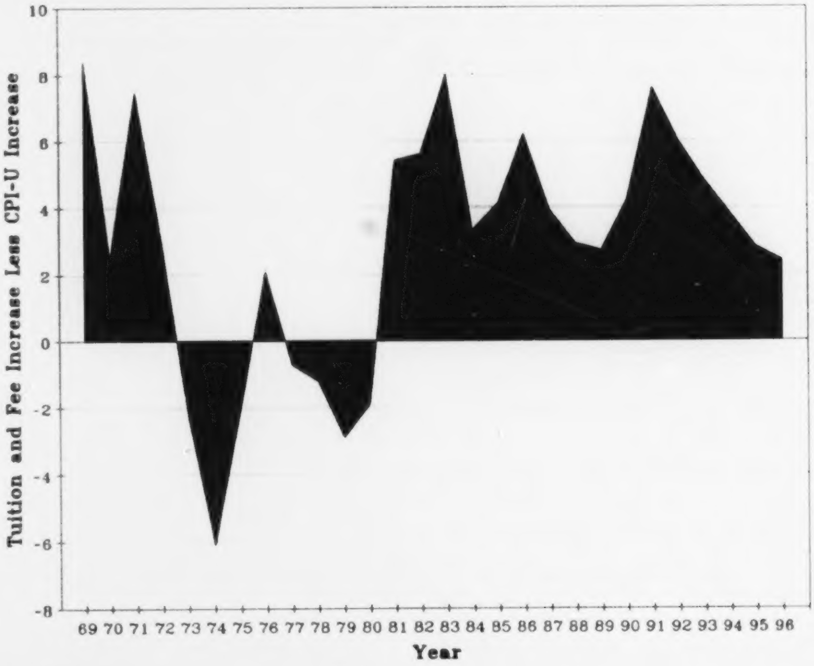
The state financing pattern for public higher education since 1980 has been one of cost-shifting from state taxpayers to students. No where is this cost shift more apparent than in the chart on this page based on data collected in the federal IPEDS financial survey (and its predecessors).

This chart shows the proportion of the expenditures for educating students in public higher education that have been paid for by tuition and fee revenues of those institutions. Here expenditures for education include all public

Annual Percentage Increases in Public University Tuition and Consumer Prices 1969 to 1996



Difference Between Annual Percentage Increases in Public University Tuition and Consumer Prices 1969 to 1996



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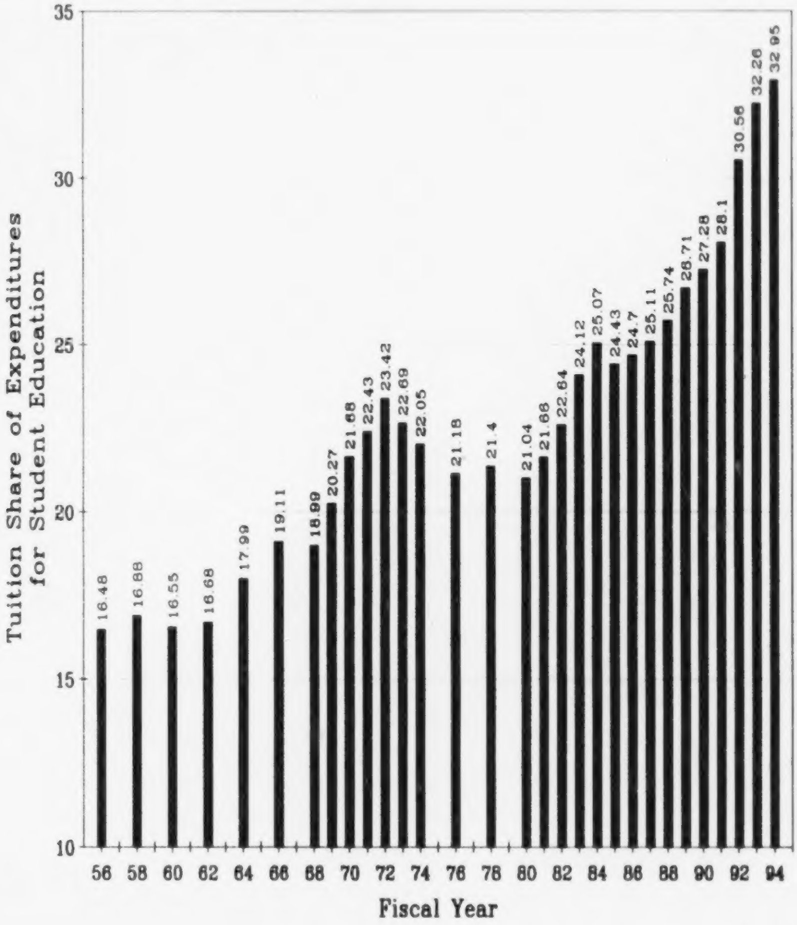
institutional expenditures for instruction, student services, and institutionally awarded student financial aid, plus a portion of expenditures for academic support (libraries), institutional support, physical plant operations and mandatory transfers.

The proportion of these fully-allocated operational expenditures for student instruction covered by tuition and fee revenues averaged about 16 percent between FY1956 and 1962, then rose to a peak of 23 percent in FY1972, dropped back to about 21 percent between FY1976 through FY1981. Beginning in FY1981 (with tuition rate decisions made in the spring of 1980), the sharp rise began.

By FY1994--the most recent year of available data IPEDS financial statistics, tuition revenues in public higher education covered nearly 33 percent of expenditures for student education. The end of this growth is not in sight, although current economic prosperity appears to have alleviated the pressure to continue sharp annual increases in tuition and fee charges to students.

Tuition Share of Expenditures for Student Education
in Public Higher Education Institutions
Fiscal Years 1956 to 1994



State Colleges and Universities

In FY1997 resident undergraduate tuition and fee charges at state colleges and universities averaged $2645. This was about 79 percent of the national average for state university flagship campuses, or $713 less.

Tuition and fee rates ranged from $4248 in **Vermont** (which is the average for Castleton State College and Lyndon State College), to $1514 in **New Mexico** (at Western New Mexico University).

Between FY1996 and FY1997, the national average tuition and fee rate increased by 4.4 percent. This was the smallest increase since FY1975 when the increase was 3.9 percent over the prior year. Generally state college and university increases were largest--double digits--between FY1982 and FY1984, and again in FY1992 (over FY1991 rates).

The year-to-year changes in tuition and fees in state colleges and universities generally follows the changes in state flagship tuition and fee rate changes. There is the pattern of very large increases in the first half of the 1980s, followed by some moderation. Then, with the 1991 recession and unprecedented reductions in many state appropriations for higher education, institutions went back to tuition and fees as the alternate source of institutional revenue. Since then annual increases in tuition and fee charges have moderated, from 11.8 percent in FY1992 (over FY1991), to 9.4 percent in FY1993, 7.2 percent in FY1994, 5.5 percent in FY1995 and FY1996, to 4.4 percent this year.

Community Colleges

As shown in the chart on the following page, estimated state average community college tuition and fees for full-time residents averaged $1457 for FY1997. This was 43 percent of the national average for state flagship university campuses, and 55 percent of the national average for state colleges and universities. Tuition and fee rates ranged from $390 in **California** to $2880 in **Vermont**. This is a wider range in rates than holds for public four-year institutions.

Between FY1996 and FY1997, the national average tuition and fee rate increased by 5.4 percent over the prior year. In FY1996 the increase was 5.1 percent over FY1995. These are the two smallest annual increases in the national average community college tuition and fee rate since the data series began in FY1980. The trends in community college tuition and fee rate increases closely follow the trends for state flagship universities and state colleges and universities. There were double-digit rate increases in FY1982, FY1983 and again in FY1992.

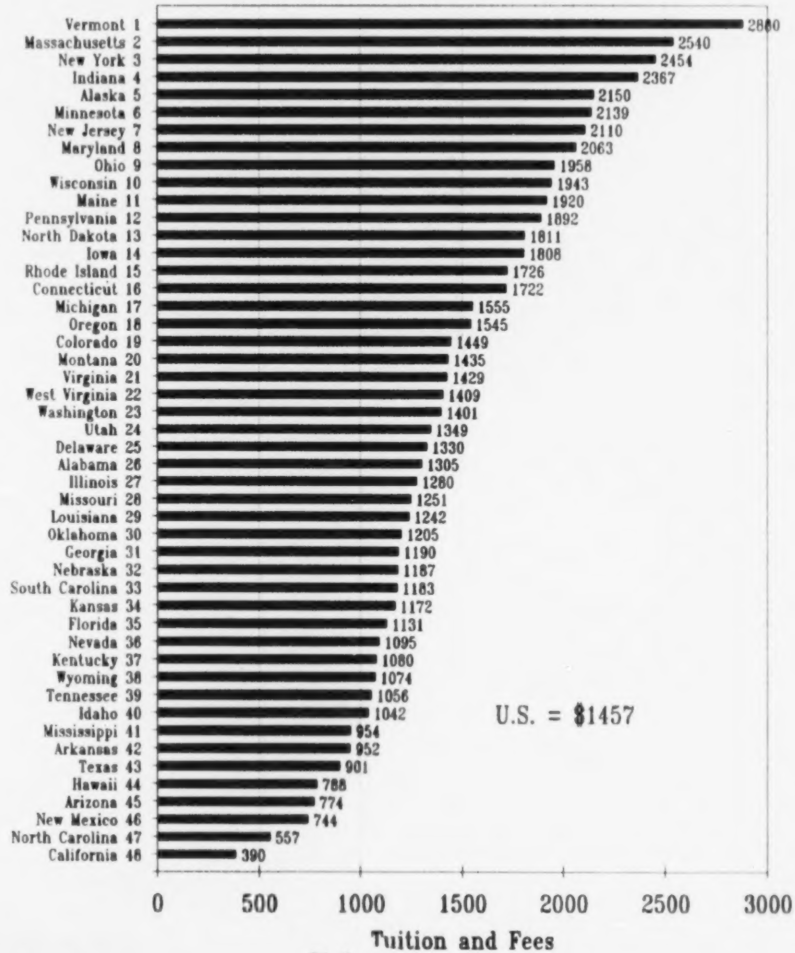
Summary and Conclusions

The cost-shift from state taxpayers to students in public colleges and universities continues in the current fiscal and academic year. Tuition and fee charges to resident undergraduate students in public institutions continue to increase at rates greater than inflation, just as they have each year since 1980. The rate of increase, however, appears to be moderating since the early 1990s as increases in state appropriations to public higher education have alleviated the need for the very large increases of the past.

Inevitably, the cost-shift and rapid run-up in tuition and fee charges has added to affordability concerns of students and their families. This cost shift has had its greatest impact on those students from low- and middle-income families. With real incomes declining among these families since the end of the 1970s, real college costs increasing sharply since about 1981, and the Pell Grant maximum award funded at far below authorized funding levels, college attendance decisions such as access, choice and persistence are inevitably impacted. The effect is a rationing of higher educational opportunity, based on ability to pay--exactly what this country set out to eliminate in 1965 and 1972.

Tuition and fee charges remain the most visible price of higher education to students and their families. However, they are not the largest costs of college attendance faced by students. According to data reported by the College Board, tuition and fees amount to 31 percent of college attendance costs at public 4-year institutions, and 24 percent at community colleges. Moreover, many students--perhaps half--receive financial aid to cover a part or all of their tuition and fee charges. Programs like the federal Pell Grant program, and large state grant programs like New York's TAP, Illinois' MAP, and California's Cal Grants help those who are often most needy pay this portion of their college attendance costs. Yet for many, the appearance of tuition and fee charges suggests financial barriers to opportunity. And their very rapid run-up since 1980 even now has the attention of federal policy makers.

Estimated State Average Community College Resident Tuition and Fees, FY1997



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14th Annual NASSGAP/NCHELP Financial Aid Research Conference May 15-17, 1997, Seattle, Washington

The annual gathering of financial aid research policy wonks occurs this year in Seattle. Sessions will feature presentations and demonstrations of computer-based models for student financial aid research purposes, evaluations of student aid programs including the several versions of HOPE, students loan debts and repayment experiences, and much more. The tentative agenda for the conference is:

- *The Use of Modeling to Evaluate State Efforts to Complement Federal Financial Aid Programs (Washington)*
- *Florida's Postsecondary Finance Simulation Model*
- *Modeling the Effects of Declining State Support for Public Higher Education (New York)*
- *The Search for a Unified Model for Multiple Financial Aid Programs*
- *Demonstration of the Cross-Program Model*
- *Pell Grant Models: Cost Projections, Recipient Characteristics, Numbers of Applicants, Growth Projections*
- *Web Sites and Higher Education Research*
- *Changes in College Revenue and Expenditure Ratios, 1989 to 1993*
- *Does Financial Aid Help Students to Attend Higher Priced Colleges?*
- *College Access, 1992 High School Graduates*
- *College Access for Low Income Students: Recent Findings*
- *Post-School Debt Burdens: How Much do Students Owe?*
- *Early Labor Force Experiences and Debt Burden*
- *Broken Partnership: The Impact of Increased Education Debt on Students, Higher Education and the Work Force*
- *Really Bad Financial Aid Programs and Policies*
- *An Examination of Long-Term Costs to Borrowers of Income Contingent Repayment Under the Federal Direct Loan Program*
- *What Do Institutions and Borrowers Really Think About Direct Lending?*
- *Preliminary Results from NPSAS:96*
- *Survey of Undergraduate Financial Aid Policies, Practices and Procedures*
- *Improving Quality in Title IV Aid Systems: A Case Study of Recent Entrant to the Quality Assurance Program*
- *Mapping the Distribution of HOPE Tax Credits*

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Postsecondary Education
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The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 58 **Iowa City, Iowa** **April 1997**

What's happening? *What should be happening?*

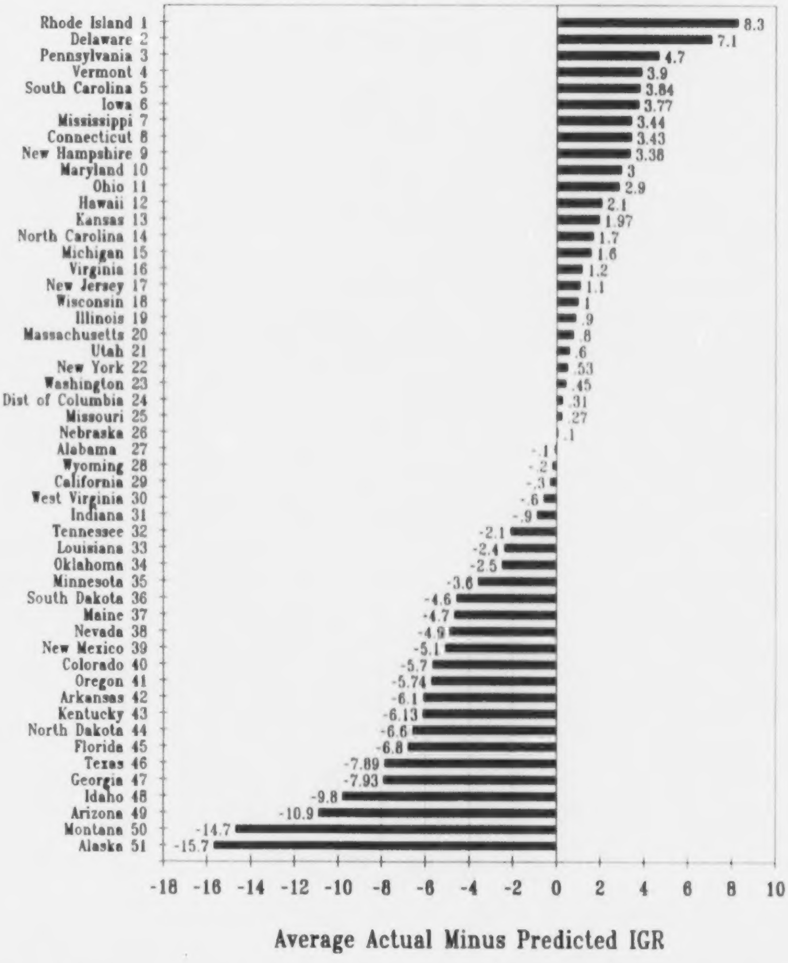
Actual versus Predicted Institutional Graduation Rates for 1100 Colleges and Universities

The rates at which undergraduate college students complete their bachelor's degrees within six years following matriculation vary widely between institutions. In 1995 these institutional graduation rates (IGRs) ranged from 97 percent at Harvard University, to 13 percent at William Tyndale College.

The most important factors explaining the differences in IGRs between institutions are the pre-college academic backgrounds students bring with them when they enroll in college. Recent research reported by the Higher Education Research Institute at UCLA demonstrates the powerful effects of high school grades and college admissions test scores on both the rate at which freshmen graduate from their college of first enrollment as well as their time-to-degree (see OPPORTUNITY for December 1996 and March 1997).

But even when pre-college academic characteristics of college freshmen are controlled for, a substantial residual in IGRs remains to be explained. Some students with great high school grades and test scores fail, while others with modest academic records succeed. In institutional terms, some colleges and universities graduate the freshmen they admit at higher rates than what one might expect given the academic backgrounds of the students they admit. Other colleges and universities graduate their students at lower rates than what could be expected given the academic backgrounds of the freshmen they enroll. This is the question addressed here.

State Average Actual Minus Predicted
Institutional Graduation Rates, 1995



Average Actual Minus Predicted IGR

Significantly, factors beyond the pre-college academic records of students influence chances for graduating from

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college. Not all of these factors are under the control of the institution. Institutions that enroll older students are quite likely have students who are also working and are thereby distracted from focused academic pursuits. Students that live off-campus are also likely to be distracted from focused academic activities.

Here we report the results of a study of institutional graduation rates conducted by OPPORTUNITY. This study sought to study IGRs controlling for the external environments of colleges and universities that could be expected to influence the rate at which enrolled freshmen graduate from bachelor degree-granting colleges and universities. We have calculated a predicted institutional graduation rate for each institution in our study based on these external influences. We then compare the actual IGR to this predicted IGR.

The result of our study is a ranking of the 1106 institutions in our sample according to the difference between their actual and predicted institutional graduation rates. Controlling for several external factors in addition to academic background believed to influence student persistence to graduation in college, the actual IGR for an institution will be above or below its predicted IGR. We attribute this residual to internal institutional factors that either foster or impede the rate at which admitted freshmen complete their bachelor's studies within six years of matriculation. These internal factors--not measured here--revolve around institutional efforts to provide supportive academic and social environments that foster student persistence and degree attainment.

Some institutions do a better job of supporting the students they admit through to graduation than do other institutions. It is this difference in the success of institutions *through their own efforts* to graduate the students they admit that is the objective of this analysis and the ranking of institutions that results from the analysis. Those institutions whose actual IGRs exceed their predicted IGRs (positive residual) have provided this supportive environment. Other institutions whose actual IGRs fall below their predicted IGRs appear to have problems in providing supportive academic and/or social environments to the freshmen they enroll.

In a non-trivial sense, this is one measure of the difference in the value-added to undergraduate education between different colleges and universities in the United States. Some institutions do a better job with the academic material they enroll, under the circumstances of delivering that collegiate experience, than do other institutions.

We see at least four possible uses for this analysis:

1. To assist those who work with disadvantaged students in colleges, to provide relevant norms for measuring efforts to improve student persistence and degree attainment in college.
2. To assist those with responsibilities for monitoring and reporting on student persistence in their own and comparable institutions.
3. To assist those who develop and monitor state performance-based budgeting programs with appropriate reference norms.
4. To assist those who assist students and their families in college planning and choice processes to make informed decisions.

The Data and Analysis

The central effort of this analysis was the derivation of predicted institutional graduation rates to compare against actual IGRs for each institution included in the fall 1996 report on "America's Best Colleges" by U.S.

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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News and World Report. This derivation involved data collection and entry, and testing of alternative models including various controls for external environmental factors thought to influence student persistence and degree attainment.

The approach taken in this analysis was to identify external influences on IGRS, and to attribute the residual not explained by these external influences to internal environmental factors of each college or university the support students through bachelor's degree attainment. The unexplained internal influences have been described by Tinto, Astin and others, and revolve around the degree to which students become involved in the academic and social life of the institution where they are enrolled. Institutions whose actual IGRs are above their predicted IGRs are more likely to have created this supportive environment than are other institutions whose actual IGRs fall below their predicted IGRs.

The data elements used in this analysis and their sources were as follows:

Institutional graduation rates: Six-year IGRs were collected from institutions and reported by U.S. News. The U.S. News survey asked institutions to report the percentage of first-time, full-time, degree-seeking freshmen who entered in the fall of 1989 that had completed a bachelor's degree before the fall of 1995. Institutions were instructed to include students who transfer out, but exclude students who transfer into the institution. For regional colleges and universities, U.S. News reported average IGRs for cohorts of freshmen admitted between 1986 and 1989.

U.S. News and World Report. (1996.) *America's Best Colleges*. Washington, DC.

SAT: Average ACT/SAT scores were used to measure the academic aptitude of the freshman class. ACT scores were converted to SAT scores through a concordance table developed by Ira Langston of the University of Illinois. The SAT scores used were for freshmen enrolled in the 1988-89 school year. These data were published by U.S. News in its 1989 report on *America's Best Colleges*.

Percent on-campus: The percent of freshmen living in campus housing is collected by ACT in its annual Institutional Data Questionnaire survey. These data are then published in:

American College Testing. (1995.) *College Planning/Search Book*. Iowa City, IA.

Part-time: The proportion of undergraduate students that were enrolled part-time was calculated from 1990 IPEDS survey data collected by the National Center for Education statistics and published on CD-ROM.

National Center for Education Statistics. *Integrated Postsecondary Education Data System, 1994.* (IPEDS94 DISC.) Washington, DC: U.S. Department of Education.

Catholic: Institutional control was examined when a substantial number of Catholic colleges and universities appeared near the top of the following ranking. A 0/1 dummy variable was used to identify institutions by Catholic control. These data are collected by the National Center for Education Statistics and published in:

National Center for Education Statistics. *1995 Directory of Postsecondary Institutions, Volume 1: 4-Year and 2-Year institutions.* NCES 96-033-1. Washington, DC: U.S. Department of Education.

Engineering: In early model testing, we observed a concentration of universities with large engineering programs where actual IGRs fell well below their predicted IGRs. To test this further, a variable was developed measuring the proportion of students studying in engineering fields for each institution. These data were collected and are published by ACT in its aforementioned *College Planning/Search Book*.

Results

The basic model developed through this analysis is:

IGR = f(SAT, %part-time, %on-campus)

This is the model used to calculate the predicted IGRS for the 1106 bachelor degree granting colleges and universities included in our sample. The institutional rankings that follow are based on the actual 6-year IGR for each institution, minus the predicted IGR for that institution based on the institution's mean SAT score, percent of freshmen living on-campus, and the percent of the freshmen who were enrolled part-time. The results are reported here first by state, then by institution.

States. The ranking of states by the average actual institutional graduation rate minus the predicted institutional graduation rate is shown in the chart on the first page of this issue of OPPORTUNITY. The average for each state was calculated by weighting the institutional residuals by the undergraduate enrollments for the bachelors degree granting institutions in their state and our sample.

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Institutional Graduation Rate Models
(coefficients and T-statistics)

Equation (Cases)	Constant	SAT1990	%On-Campus	%PT1990	Catholic	%Engin	R^2
1 (1106)	-0.3766	0.00096 (41.24)					60.64
2 (1106)	-0.3658	0.00085 (35.78)	0.147 (12.48)				65.51
3 (1106)	-0.3412	0.00084 (34.97)	0.135 (10.27)	-0.044 (-2.02)			65.64
4 (1106)	-0.3246	0.00083 (35.91)	0.120 (9.37)	-0.103 (-4.66)	0.0841 (8.88)		67.94
5 (1105)	-0.3543	0.00087 (34.55)	0.125 (9.41)	-0.052 (-2.38)		-0.098 (-3.04)	65.63

For example, in **Rhode Island**, the weighted mean actual institutional graduation rate exceeded the weighted mean predicted institutional graduation rate by 8.3 percent. There were five institutions in the Rhode Island sample: Providence, Brown, University of Rhode Island, Roger Williams, and Rhode Island College. All had positive residuals and they ranged from +23.0 percent at Providence to +2.8 percent at Rhode Island College. Apparently, Rhode Island colleges and universities all do a better-than-average job of supporting the freshmen they admit through to graduation.

Other states with average IGRs that were 3 percent or more above their predicted IGRs included **Delaware** (+7.1 percent), **Pennsylvania** (+4.7 percent), **Vermont** (+3.9 percent), **South Carolina** (+3.8 percent), **Iowa** (+3.8 percent), **Mississippi** (+3.4 percent), **Connecticut** (+3.4 percent), **New Hampshire** (+3.4 percent) and **Maryland** (+3.0 percent).

At the other end of this range, too many states had average actual IGRs that were well below their predicted IGRs. **Alaska** ranked 51st among the states plus DC. Its state average residual (actual minus predicted) IGR was -15.7 percent. Two institutions comprised the Alaska sample. The University of Alaska at Fairbanks' actual minus predicted IGR was -14.8 percent, while Alaska Pacific University's residual was -23.7 percent. Apparently Alaska institutions do not provide academically supportive environments leading to graduation within six years.

Other states where actual IGRs fell substantially below their predicted values include **Montana** (-14.7 percent), **Arizona** (-10.9 percent), **Idaho** (-9.8 percent), **Georgia** (-7.9 percent) and **Texas** (-7.9 percent). Ten additional states had negative residuals of 4 percent or more. These states too generally provide unsupportive environments on their college and university campuses.

The institutions in each state that had the highest and lowest actual minus predicted institutional graduation rates are shown in the table on the following page. In five states the institution with the highest residual still had a negative value. These states include **Alaska, Arizona, Idaho, Montana, Nevada** and **Wyoming**--all western states. This means that *all* colleges and universities in these states had negative residual institutional graduation rates. Their concentration in the Rocky Mountains probably is not coincidental.

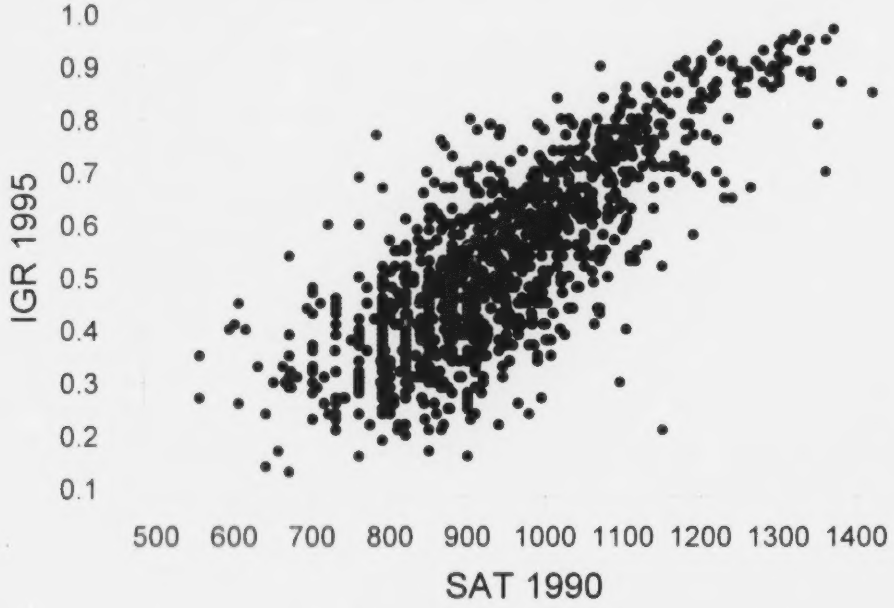
In only one state was the lowest residual still positive--**Rhode Island**. All five colleges and universities there had actual IGRs that were greater than their predicted IGRs.

Institutions. Students pursue baccalaureate studies at colleges and universities. The institutions included in this study were colleges and universities that award bachelor's degrees and on which the key data used in this study were available. The essential data for this study were available for 1106 colleges and universities.

The regression model developed in the study to calculate predicted

Institutional Graduation Rate Mean and Range by State

State	Number of Inst.	Weighted Mean Institutional Graduation Rate	Highest Actual Minus Predicted Institutional Graduation Rate		Lowest Actual Minus Predicted Institutional Graduation Rate	
			Institution	Residual	Institution	Residual
Alaska	2	-.157	Univ of Alaska-Frbk	-.148	Alaska Pacific Univ	-.237
Alabama	21	-.001	Faulkner Univ	+.239	Troy State Un-Mont	-.168
Arkansas	12	-.061	Harding Univ	+.042	Un of Arkansas-LR	-.127
Arizona	3	-.109	Arizona State Univ	-.096	North Arizona Univ	-.166
California	54	-.003	Azusa Pacific Univ	+.183	Pacific Christian Col	-.156
Colorado	11	-.057	Colorado College	+.155	Colorado Christian U	-.320
Connecticut	17	+.034	Sacred Heart Univ	+.371	Univ of Bridgeport	-.132
Dist of Columbia	7	+.003	Trinity College	+.070	Mount Vernon Coll	-.067
Delaware	3	+.071	Univ of Delaware	+.093	Delaware State Un	-.072
Florida	26	-.068	Rollins College	+.076	Univ of Tampa	-.180
Georgia	28	-.079	Albany State Univ	+.345	Kennesaw State Un	-.218
Hawaii	3	+.021	Hawaii Pacific Univ	+.079	Chaminade Univ	-.153
Iowa	26	+.038	Dordt College	+.153	Graceland College	-.145
Idaho	4	-.098	Idaho State Univ	-.025	Boise State Univ	-.151
Illinois	44	+.009	Barat College	+.254	Illinois College	-.172
Indiana	35	-.009	Purdue Univ-Calmt	+.198	Ind Un-Pur Un-I	-.171
Kansas	19	+.020	Univ of Kansas	+.097	Bethany College	-.162
Kentucky	19	-.061	Pikeville College	+.168	Eastern KY Univ	-.160
Louisiana	19	-.024	Grambling State Un	+.178	Louisiana Coll	-.110
Massachusetts	48	+.008	Atlantic Union Col	+.321	Simons Rock of Bard	-.535
Maryland	20	+.030	Col of Notre Dame	+.167	St. John's Coll	-.163
Maine	13	-.047	Colby College	+.119	Unity College	-.208
Michigan	31	+.016	Hillsdale College	+.118	Adrian College	-.143
Minnesota	23	-.036	Concordia-Moorhd	+.228	Macalester Coll	-.220
Missouri	34	+.003	Lindenwood College	+.288	Missouri Valley Col	-.247
Mississippi	12	+.034	Delta State Univ	+.160	Tougaloo College	-.370
Montana	5	-.147	Rocky Mountain Col	-.044	Montana State Un	-.181
North Carolina	42	+.017	Barber Scotia Coll	+.251	Greensboro Coll	-.171
North Dakota	8	-.066	Un of North Dakota	+.038	Minot State Univ	-.213
Nebraska	15	+.001	Bellevue Univ	+.154	Univ of NE-Omaha	-.108
New Hampshire	10	+.034	St. Anselem	+.164	Notre Dame Coll	-.086
New Jersey	23	+.011	Felician College	+.287	Centenary College	-.212
New Mexico	6	-.051	Westrn New Mexico	+.126	Univ of New Mexico	-.167
Nevada	2	-.049	Univ of NV-Las Vg	-.033	Univ of NV-Reno	-.078
New York	86	+.005	Molloy College	+.236	Buffalo State Coll	-.270
Ohio	48	+.029	Mount St Joseph	+.345	Antioch College	-.247
Oklahoma	15	-.025	Oklahoma St Univ	+.105	Oklahoma City Univ	-.202
Oregon	13	-.057	Willamette Univ	+.060	Southern Oregon Un	-.228
Pennsylvania	81	+.047	Gwynedd Mercey Cl	+.356	Drexel Univ	-.131
Rhode Island	5	+.083	Providence College	+.230	Rhode Island Coll	+.028
South Carolina	22	+.038	Presbyterian Coll	+.209	Limestone College	-.122
South Dakota	7	-.046	So Dakota State Un	+.038	Black Hills St Col	-.142
Tennessee	31	-.021	LeMoyne-Owen Col	+.216	Fisk University	-.209
Texas	42	-.079	Un of Incarnate Wd	+.264	Univ of Houston	-.276
Utah	5	+.006	Utah State Univ	+.105	Weber State Univ	-.033
Virginia	34	+.012	Univ of Virginia	+.134	Ferrum College	-.190
Vermont	13	+.039	Trinity College	+.252	Marlboro Coll	-.261
Washington	13	+.005	Un of Puget Sound	+.054	St. Martin's Coll	-.199
Wisconsin	30	+.010	Silver Lake College	+.189	Northland College	-.124
West Virginia	14	-.006	Bluefield State Un	+.143	Davis & Elkins Coll	-.124
Wyoming	1	-.016	Univ of Wyoming	-.016		



institutional graduation rates is the third model in the table on page 4:

IGR = -0.3412 + 0.00085 (SAT 1990) + 0.135 (% on-campus) - 0.044 (% part-time)

The data used to calculate each institution's predicted IGR is shown in the ranking table that follows. Our analysis has calculated the predicted institutional graduation rate for each institution, and that too is reported in the ranking table.

The table that begins on page 9 ranks the 1106 colleges and universities according to the difference between their actual and predicted institutional graduation rates. The range is from +.371 to -.535. That is to say, the top-ranked institution has an actual IGR that is 37.1 percent greater than its predicted IGR. At the other extreme, the bottom-ranked college has an actual IGR that is 53.5 percent below its predicted IGR. All other institutions fall between these extremes.

The number of institutions with residual IGRS in different ranges approximates the expected bell-shaped distribution as follows:

Residual	Inst.
.300 to .371	6
.200 to .299	24
.100 to .199	130
.000 to .099	394
-.100 to -.001	375
-.200 to -.101	153
-.300 to -.201	21
-.400 to -.301	2
LT -.400	1

Variations on Model

In our review of the rankings based on the third regression model on page 4, two groups of institutions stood out on the list. First we noticed that there was a substantial concentration of Catholic colleges near the top of the list. Then we noticed the concentration of institutions with engineering programs in the bottom half of the list.

Catholic: To test the effect of Catholic control of the college or university on its residual institutional graduation rate, we added a dummy variable (1=Catholic, 0=other) and reran our regressions. The model that resulted is model 4 in the table on page 4.

The addition of the variable for Catholic control improved the explanatory power of the model and strengthened the contribution of the part-time variable. More importantly, Catholic colleges add about eight percent to one's chances of graduating from college in six years, all other things being equal. Apparently, Catholic colleges and universities provide unusually supportive academic and social environments for the students they enroll.

All graduation rate studies find that students graduate from private colleges and universities at higher rates than do students enrolled in public institutions. This is true even when academic backgrounds are controlled (see OPPORTUNITY for March 1996.) So our finding is not surprising--just disappointing since about only about one-third of all undergraduates are enrolled in private four-year institutions. Comments received from our earlier analysis of institutional graduation rates suggested a variable to control for public/private institutional control. We chose not to do this (except in the case of Catholic control) because we expect public institutions to be as successful graduating the students they admit as are private institutions. They are not however.

Engineering: Universities with engineering programs normally attract highly academically qualified enrollments. However, our initial review of these rankings suggested that universities with substantial engineering programs ranked relatively low. That is to say, the presence of engineering programs tended to lead to actual IGRs falling below predicted IGRs.

To test this perception, we added a variable that reflected the proportion of each institution's undergraduate enrollments that were in engineering programs. The model incorporating this variable is model 5 in the table on page 4. The results confirmed our initial observation: the coefficient on the engineering variable is negative and significant.

Our conclusion (both analysts have engineering education backgrounds) is that engineering programs are relatively unsuccessful graduating the students they enroll controlling for the often outstanding academic credentials engineering students bring with them when they enter college. This conclusion does not apply to all engineering programs--Polytechnic University (NY), Lehigh University (PA) and North Carolina at Raleigh are exceptions. But Drexel University (PA), Cal Tech (CA), Colorado School of Mines (CO), Rensselaer Polytechnic (NY), Illinois Institute of Technology (IL) and many other institutions with engineering programs graduate their students at rates well below what is expected given the academic talent of the freshmen they enroll.

Message to Enrollment Consultants

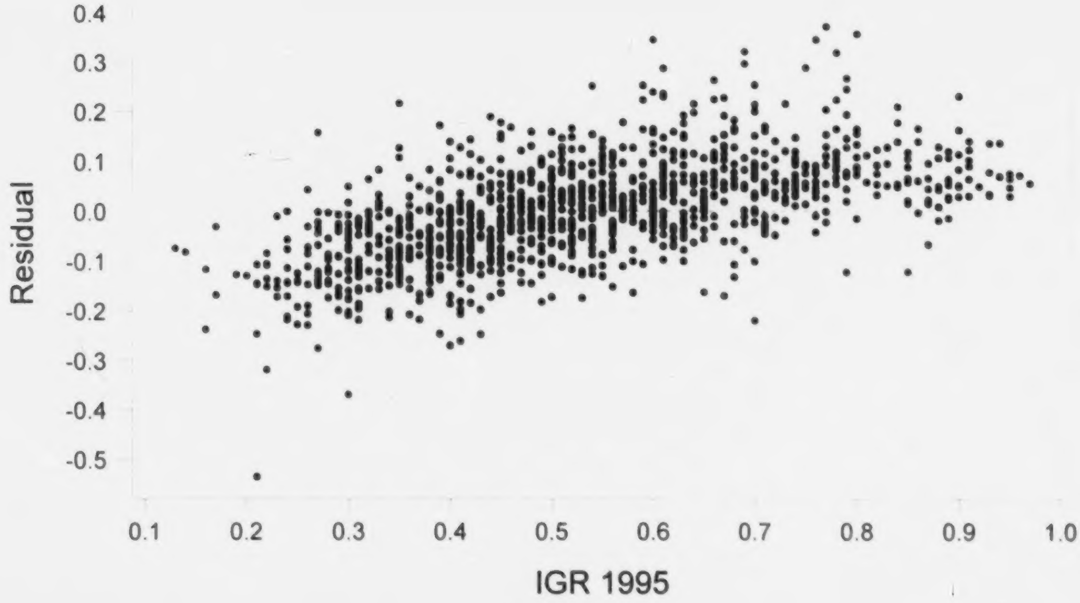
This analysis of institutional graduation rates identifies many institutions that have graduation rates well below what they should have. These institutions are in varying degrees of difficulty supporting the students that they enroll.

Assuming that the data used in this analysis are correct and that this model is an appropriate one for judging institutional performance in supporting students that are admitted, the following ranking is a list, beginning at the bottom, of institutions that need help.

We suggest that enrollment management consultants seeking to assist institutions that have problems providing supportive environments for the students they enroll use this ranking as a prospective client list. Start at the bottom and work up. And

Residuals Versus IGR 1995

(response is IGR 1995)



for the institutions: if they don't call you, you call them.

Message to Enrollment Analysts

We expect that this explicit ranking of colleges and universities according to the difference between their actual and predicted graduation rates will provoke no small amount of interest on the part of institutions in their relative performance. It should, and we want to encourage that interest. Ultimately we would like to see institutions improve the rate at which they educate and graduate the students that they admit.

But along the way, we want also to assist those who study institutional graduation rates. Therefore, we hereby offer to share the data base we assembled for this analysis with subscribers to OPPORTUNITY for their own analyses of IGRs. We look forward to their additions to our understanding of persistence and attainment

Our own review of what was accomplished in this study suggests that improvements to the model we developed are both possible and needed. While there are upper limits to what any model can explain given problems in data quality (particularly self-calculated and unaudited institutional graduation rates), most statisticians reviewing our analysis will wish to consider variable transformations, interactions and omissions. Moreover, as the scatter plot of residuals versus IGRs makes clear, the assumed linear relationships of our model are probably incorrect.

We have chosen not to undertake these more elaborate and probably appropriate analyses here. We wanted to simplify our analysis as much as possible. We want the non-quantitative readers of OPPORTUNITY to follow our analyses and understand the meaning of the findings and conclusions.

Finally, we are currently preparing a parallel study of freshman-to-sophomore student persistence for an upcoming issue of OPPORTUNITY. This study is being developed much like the study reported here. In fact we expect similar findings. Look for it by early summer.

Summary and Conclusions

Our studies of and reports on institutional graduation rates in OPPORTUNITY are prompted by the too frequent misuse of raw data on institutional graduation rates. Examples of the misuse of raw data on institutional graduation rates include the data reported to and by the NCAA, and, until last fall, by U.S. News and World Report in its national and regional rankings of American colleges and universities.

IGRs are misused when they fail to control for the widely varying academic backgrounds of freshman cohorts admitted to different colleges and universities. Some colleges that admit freshmen with relatively modest academic credentials do well to graduate half of them. Other colleges that graduate three-quarters of those that they admit should do much better. Not until academic and other external environmental factors are controlled for can reasonable judgements about the institutional graduation rates be formed. This analysis has attempted to do so, and thus some judgements about the academic and social environments of college and university campuses are possible.

As a rough cut, those institutions whose actual IGRs are 10 percent or more above where they are predicted to be are probably doing a good job of supporting the students they admit. There are 160 colleges and universities in this group.

At the other end of the scale, those whose actual IGRs fall 10 percent or more below where they are predicted to be appear to be having problems supporting the students they enroll. There are 177 colleges and universities in this group. If the data used in this analysis are accurate, then they are in trouble. It would be difficult to recommend enrollment in such institutions to prospective students whose academic credentials were at or below the average for the institution. It would also be difficult to recommend the packaging and acceptance of educational loans for needy students at such institutions, especially those whose academic credentials were at or below the institutional averages.

Finally, we have listened to those who have pleaded the case for institutions that serve older, part-time students, usually in urban settings. Without the kinds of controls used in this study (part-time, living on-campus), these institutions often fare poorly in comparison with institutions that serve younger, full-time students, often in non-urban settings. The controls were incorporated here to address this concern, and they are both statistically significant and have expected signs. So now, after these controls have been added, if actual IGRs still fall below those predicted by this model, problems remain in supporting enrolled students.

Institutions can and should be held accountable for serving the students they deem qualified to admit. Our study indicates which institutions are doing relatively good jobs and which are not. We believe this approach to be a far superior method to the reporting of raw data, without controls, on institutional graduation rates.

Ranking By Actual Minus Predicted Institutional Graduation Rates

Rank	Institution	State	IGR 1995	SAT 1990	% OC 1995	%PT 1990	Predicted IGR	Difference
1	Sacred Heart University	CT	0.77	782	0.80	0.56	0.399	0.371
2	Gwynedd Mercy College	PA	0.80	903	0.40	0.62	0.444	0.356
3	College of Mt. St.Joseph	OH	0.76	865	0.40	0.55	0.415	0.345
4	Albany State University	GA	0.60	720	0.00	0.19	0.255	0.345
5	Atlantic Union College	MA	0.69	760	0.60	0.21	0.369	0.321
6	York Coll. of Penn	PA	0.78	912	0.40	0.39	0.461	0.319
7	Holy Family College	PA	0.69	901	0.00	0.50	0.394	0.296
8	Lindenwood College	MO	0.75	870	0.60	0.19	0.462	0.288
9	Felician College	NJ	0.61	820	0.00	0.56	0.323	0.287
10	Quinnipiac College	CT	0.79	930	0.70	0.24	0.524	0.266
11	Univ. of Incarnate Word	TX	0.66	843	0.30	0.25	0.396	0.264
12	Barat College	IL	0.70	847	0.70	0.41	0.446	0.254
13	Trinity College Vermont	VT	0.59	835	0.00	0.51	0.338	0.252
14	Barber Scotia College	NC	0.54	670	0.50	0.00	0.289	0.251
15	Assumption College	MA	0.79	928	0.90	0.31	0.546	0.244
16	Faulkner University	AL	0.60	760	0.60	0.39	0.361	0.239
17	Molloy College	NY	0.61	865	0.00	0.25	0.374	0.236
18	Providence College	RI	0.90	1070	0.90	0.20	0.670	0.230
19	St. Joseph College	NY	0.61	890	0.00	0.59	0.380	0.230
20	Concordia-Morehead	MN	0.67	790	0.90	0.03	0.442	0.228
21	St. John's University	NY	0.66	931	0.00	0.12	0.435	0.225
22	St. Thomas Aquinas	NY	0.59	850	0.10	0.44	0.367	0.223
23	Otterbein College	OH	0.78	942	0.90	0.32	0.557	0.223
24	LeMoyne-Owen College	TN	0.35	555	0.10	0.11	0.134	0.216
25	College of the Ozarks	MO	0.73	880	0.90	0.11	0.514	0.216
26	Neumann College	PA	0.64	942	0.00	0.58	0.424	0.216
27	St. Joseph College	CT	0.70	900	0.70	0.52	0.486	0.214
28	Presbyterian College	SC	0.84	1015	0.90	0.03	0.631	0.209
29	Westminster College	PA	0.77	940	0.90	0.05	0.567	0.203
30	Regis College	MA	0.70	890	0.80	0.32	0.500	0.200
31	Purdue University-Calumet	IN	0.64	960	0.00	0.52	0.442	0.198
32	Stonehill College	MA	0.79	990	0.90	0.34	0.597	0.193
33	Georgian Court College	NJ	0.63	854	0.60	0.43	0.438	0.192
34	Wheelock College	MA	0.67	870	0.80	0.43	0.478	0.192
35	Silver Lake College	WI	0.44	730	0.00	0.48	0.251	0.189
36	Azusa Pacific University	CA	0.68	857	0.90	0.06	0.497	0.183
37	Southern Vermont College	VT	0.57	799	0.60	0.42	0.392	0.178
38	Grambling State Univ.	LA	0.45	605	0.80	0.05	0.272	0.178
39	University of Scranton	PA	0.84	1074	0.80	0.12	0.663	0.177
40	Rosary College	IL	0.63	880	0.50	0.25	0.454	0.176
41	Lane College	TN	0.39	670	0.00	0.06	0.219	0.171
42	Meredith College	NC	0.71	912	0.90	0.14	0.540	0.170
43	Pikeville College	KY	0.46	730	0.20	0.15	0.292	0.168
44	Col. of Notre Dame-Maryland	MD	0.68	926	0.80	0.71	0.513	0.167
45	St. Xavier University	IL	0.52	820	0.20	0.46	0.354	0.166
46	Fairfield University	CT	0.86	1103	0.90	0.25	0.695	0.165
47	Wagner College	NY	0.68	930	0.60	0.11	0.516	0.164
48	Mount Mary College	WI	0.60	880	0.40	0.36	0.436	0.164
49	St. Anselm College	NH	0.78	998	0.90	0.05	0.616	0.164
50	St. Mary's College	IN	0.80	1020	0.90	0.01	0.636	0.164
51	Iona College	NY	0.59	866	0.40	0.31	0.426	0.164
52	Trinity College	CT	0.90	1170	0.90	0.56	0.738	0.162
53	Pace University	NY	0.60	937	0.10	0.46	0.439	0.161
54	Springfield College	MA	0.68	901	0.80	0.09	0.519	0.161
55	Kings College	PA	0.71	930	0.90	0.26	0.550	0.160
56	Delta State University	MS	0.48	700	0.60	0.16	0.320	0.160
57	Spalding University	KY	0.50	818	0.10	0.41	0.341	0.159
58	Marywood College	PA	0.62	920	0.30	0.24	0.461	0.159
59	Southern University-New Orleans	LA	0.27	555	0.00	0.27	0.113	0.157
60	Elms College	MA	0.60	895	0.40	0.48	0.443	0.157
61	Colorado College	CO	0.80	1030	0.90	0.00	0.645	0.155
62	Bellevue University	NE	0.45	790	0.00	0.60	0.296	0.154
63	Union University	TN	0.54	880	0.00	0.26	0.386	0.154
64	Moravian College	PA	0.77	1026	0.80	0.26	0.617	0.153
65	Dordt College	IA	0.67	880	0.90	0.05	0.517	0.153
66	Eastern Illinois University	IL	0.63	850	0.80	0.08	0.477	0.153
67	College of Mt. St. Vincent	NY	0.63	913	0.50	0.34	0.478	0.152
68	Rosemount College	PA	0.70	941	0.80	0.18	0.549	0.151
69	Carson-Newman College	TN	0.52	790	0.40	0.11	0.371	0.149
70	Carroll College	WI	0.63	997	0.00	0.31	0.482	0.148
71	North Park College	IL	0.61	850	0.70	0.10	0.463	0.147

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Rank	Institution	State	IGR 1995	SAT 1990	% OC 1995	%PT 1990	Predicted IGR	Difference
72	Spelman College	GA	0.74	970	0.90	0.04	0.593	0.147
73	Alverno College	WI	0.51	850	0.10	0.52	0.363	0.147
74	University of Mobile	AL	0.45	730	0.30	0.16	0.305	0.145
75	St. Michael's College	VT	0.79	1035	0.90	0.09	0.645	0.145
76	Capital University	OH	0.66	915	0.80	0.44	0.516	0.144
77	Bluefield State College	WV	0.42	760	0.00	0.46	0.277	0.143
78	Union College	KY	0.55	820	0.50	0.16	0.408	0.142
79	Mount St.Mary's College	MD	0.72	955	0.90	0.06	0.579	0.141
80	Hamilton College	NY	0.91	1180	0.90	0.01	0.771	0.139
81	Benedict College	SC	0.40	593	0.80	0.07	0.261	0.139
82	Villanova University	PA	0.86	1130	0.90	0.17	0.722	0.138
83	Univ. of North Carolina	NC	0.84	1101	0.90	0.06	0.702	0.138
84	University of Notre Dame	IN	0.94	1220	0.90	0.00	0.805	0.135
85	University of Virginia	VA	0.93	1214	0.90	0.09	0.796	0.134
86	American Intl. College	MA	0.60	875	0.60	0.18	0.467	0.133
87	Siena College	NY	0.80	1066	0.90	0.19	0.667	0.133
88	Baldwin-Wallace College	OH	0.67	939	0.80	0.37	0.539	0.131
89	Dallas Baptist University	TX	0.48	790	0.40	0.61	0.349	0.131
90	Fordham University	NY	0.77	1070	0.70	0.23	0.642	0.128
91	Fontbonne College	MO	0.51	800	0.50	0.36	0.382	0.128
92	Nebraska Wesleyan	NE	0.68	945	0.80	0.18	0.552	0.128
93	Univ. of the South	TN	0.88	1159	0.90	0.02	0.752	0.128
94	Muhlenberg College	PA	0.83	1110	0.90	0.22	0.703	0.127
95	Voorhes College	SC	0.41	600	0.90	0.03	0.283	0.127
96	Wofford College	SC	0.79	1052	0.90	0.02	0.663	0.127
97	Upper Iowa Univ.	IA	0.55	806	0.80	0.47	0.423	0.127
98	Emmanuel College	MA	0.57	836	0.70	0.28	0.443	0.127
99	Ohio Northern Univ.	OH	0.67	910	0.90	0.03	0.543	0.127
100	Santa Clara University	CA	0.83	1101	0.90	0.03	0.703	0.127
101	Cardinal Stritch College	WI	0.58	890	0.40	0.15	0.454	0.126
102	Western New Mexico	NM	0.35	670	0.10	0.25	0.224	0.126
103	California State Univ.-Fresno	CA	0.53	868	0.20	0.20	0.406	0.124
104	Cabrini College	PA	0.61	923	0.50	0.34	0.486	0.124
105	California U. of Penn.	PA	0.52	806	0.50	0.15	0.396	0.124
106	James Madison Univ.	VA	0.82	1096	0.90	0.07	0.697	0.123
107	Holy Cross	MA	0.91	1200	0.90	0.00	0.788	0.122
108	Univ. of Southern Mississippi	MS	0.47	700	0.80	0.14	0.348	0.122
109	Manhattan College	NY	0.70	1005	0.60	0.10	0.579	0.121
110	Loyola Marymount University	CA	0.73	992	0.90	0.08	0.610	0.120
111	St. Mary's Univ. of Minnesota	MN	0.62	861	0.90	0.07	0.500	0.120
112	Colby College	ME	0.89	1180	0.90	0.01	0.771	0.119
113	Susquehanna University	PA	0.74	1010	0.90	0.17	0.621	0.119
114	Washington & Jefferson	PA	0.78	1050	0.90	0.00	0.662	0.118
115	Rider University	NJ	0.62	908	0.70	0.30	0.502	0.118
116	Hillsdale College	MI	0.66	910	0.90	0.04	0.542	0.118
117	St. Josephs College	ME	0.63	915	0.90	0.82	0.512	0.118
118	Dickinson University	PA	0.85	1136	0.90	0.02	0.733	0.117
119	Penn State-Erie, Behrend Col	PA	0.62	951	0.40	0.18	0.503	0.117
120	La Salle University	PA	0.71	1020	0.70	0.37	0.593	0.117
121	Suffolk University	MA	0.51	890	0.00	0.29	0.394	0.116
122	Ursuline College	OH	0.56	900	0.40	0.57	0.444	0.116
123	Concordia University	IL	0.60	880	0.80	0.48	0.485	0.115
124	Goshen College	IN	0.67	976	0.60	0.10	0.555	0.115
125	Chestnut Hill College	PA	0.64	940	0.70	0.40	0.525	0.115
126	Lakeland College	WI	0.50	790	0.70	0.70	0.386	0.114
127	Madonna University	MI	0.42	790	0.10	0.68	0.306	0.114
128	Grove City Coll.	PA	0.78	1072	0.80	0.01	0.666	0.114
129	Emory University	GA	0.90	1200	0.90	0.02	0.787	0.113
130	Curry College	MA	0.55	810	0.80	0.22	0.437	0.113
131	Beaver College	PA	0.66	950	0.80	0.39	0.547	0.113
132	Pacific Union College	CA	0.56	820	0.80	0.15	0.449	0.111
133	St. Lawrence	NY	0.81	1095	0.90	0.02	0.699	0.111
134	Merrimack Coll.	MA	0.63	960	0.50	0.31	0.519	0.111
135	Depauw University	IN	0.77	1047	0.90	0.01	0.659	0.111
136	College of Wooster	OH	0.77	1050	0.90	0.01	0.661	0.109
137	Penn State University	PA	0.80	1090	0.90	0.07	0.692	0.108
138	Clark University	MA	0.74	1070	0.60	0.12	0.633	0.107
139	Lincoln University	MO	0.35	670	0.30	0.43	0.243	0.107
140	University of Dayton	OH	0.74	1021	0.90	0.10	0.633	0.107
141	St. Vincent College	PA	0.69	982	0.80	0.18	0.583	0.107
142	Seton Hall University	NJ	0.65	970	0.60	0.24	0.544	0.106
143	Wilmington College	OH	0.55	820	0.80	0.26	0.444	0.106
144	Univ. of California-Riverside	CA	0.66	1007	0.40	0.10	0.554	0.106

Rank	Institution	State	IGR 1995	SAT 1990	% OC 1995	%PT 1990	Predicted IGR	Difference
145	Bucknell Univiversity	PA	0.89	1196	0.90	0.01	0.784	0.106
146	Connecticut College	CT	0.88	1190	0.90	0.12	0.774	0.106
147	John Carrol University	OH	0.74	1040	0.80	0.13	0.634	0.106
148	Utah State University	UT	0.56	850	0.70	0.28	0.455	0.105
149	Livingstone College	NC	0.40	614	0.90	0.02	0.295	0.105
150	Oklahoma State University	OK	0.49	790	0.50	0.10	0.385	0.105
151	Taylor University	IN	0.72	996	0.90	0.02	0.616	0.104
152	Union College	NY	0.85	1155	0.90	0.09	0.746	0.104
153	Elizabeth City State Univ	NC	0.45	710	0.70	0.07	0.346	0.104
154	Loyola College	MD	0.78	1103	0.70	0.05	0.677	0.103
155	Rockhurst College	MO	0.62	966	0.50	0.46	0.517	0.103
156	Creighton Univ	NE	0.67	945	0.90	0.14	0.567	0.103
157	Xavier University	OH	0.66	957	0.80	0.29	0.558	0.102
158	Mount Senario College	WI	0.43	700	0.80	0.61	0.328	0.102
159	Concordia Univ-Wisconsin	WI	0.51	820	0.50	0.14	0.409	0.101
160	Washington & Lee	VA	0.91	1225	0.90	0.00	0.809	0.101
161	Marquette University	WI	0.74	1031	0.90	0.10	0.641	0.099
162	Point Park College	PA	0.49	824	0.50	0.58	0.393	0.097
163	Clarion U. of Penn	PA	0.59	920	0.50	0.13	0.493	0.097
164	University of Kansas	KS	0.57	910	0.40	0.08	0.473	0.097
165	Marietta College	OH	0.70	990	0.90	0.18	0.604	0.096
166	Newberry College	SC	0.57	860	0.70	0.04	0.474	0.096
167	Fitchburg State College	MA	0.54	890	0.40	0.37	0.444	0.096
168	Gannon University	PA	0.61	922	0.70	0.30	0.514	0.096
169	Boston College	MA	0.87	1191	0.90	0.12	0.775	0.095
170	SUNY-Binghamton	NY	0.83	1143	0.90	0.10	0.736	0.094
171	Lebanon Valley Coll	PA	0.68	990	0.80	0.28	0.586	0.094
172	College of St. Francis	IL	0.59	955	0.50	0.74	0.496	0.094
173	Southwest Baptist University	MO	0.52	820	0.70	0.36	0.426	0.094
174	Anna Maria College	MA	0.55	840	0.80	0.36	0.456	0.094
175	Central College	IA	0.70	985	0.90	0.02	0.606	0.094
176	Millsaps College	MS	0.75	1050	0.90	0.12	0.657	0.093
177	Illinois Wesleyan	IL	0.78	1080	0.90	0.01	0.687	0.093
178	University of Delaware	DE	0.74	1044	0.90	0.23	0.647	0.093
179	St. Bonaventure University	NY	0.70	986	0.90	0.03	0.607	0.093
180	Lewis University	IL	0.49	850	0.30	0.37	0.397	0.093
181	Luther College	IA	0.77	1070	0.90	0.03	0.677	0.093
182	College of St. Rose	NY	0.63	954	0.70	0.38	0.538	0.092
183	Cedar Crest College	PA	0.61	904	0.90	0.49	0.518	0.092
184	Humboldt State University	CA	0.55	958	0.00	0.12	0.458	0.092
185	Brandeis University	MA	0.82	1130	0.90	0.01	0.729	0.091
186	St. Norberts College	WI	0.71	1000	0.90	0.02	0.619	0.091
187	Hiram College	OH	0.76	1070	0.90	0.22	0.669	0.091
188	High Point University	NC	0.56	844	0.80	0.14	0.469	0.091
189	Viterbo College	WI	0.53	850	0.60	0.32	0.439	0.091
190	College of William & Mary	VA	0.91	1240	0.90	0.02	0.820	0.090
191	Purdue Univ.-West Lafayette	IN	0.71	1005	0.90	0.08	0.620	0.090
192	Dennison	OH	0.78	1085	0.90	0.01	0.691	0.089
193	Franklin & Marshall	PA	0.80	1110	0.90	0.02	0.711	0.089
194	Augustana College	IL	0.75	1050	0.90	0.01	0.661	0.089
195	Kenyon College	OH	0.85	1170	0.90	0.01	0.762	0.088
196	Duquesne University	PA	0.70	1015	0.80	0.13	0.613	0.087
197	Simmons College	MA	0.67	980	0.80	0.13	0.584	0.086
198	University of Northern Iowa	IA	0.61	910	0.80	0.15	0.524	0.086
199	Trinity Christian Col.	IL	0.51	820	0.60	0.07	0.425	0.085
200	Shippensburg U. of Pennsylvania	PA	0.67	978	0.80	0.06	0.585	0.085
201	Tuskegee University	AL	0.50	760	0.90	0.05	0.416	0.084
202	Sarah Lawrence	NY	0.80	1120	0.90	0.10	0.716	0.084
203	Michigan State University	MI	0.69	990	0.90	0.10	0.607	0.083
204	Hannibal-LaGrange Col	MO	0.40	760	0.30	0.46	0.317	0.083
205	University of North Alabama	AL	0.33	630	0.50	0.18	0.247	0.083
206	Drew University	NJ	0.78	1096	0.90	0.07	0.697	0.083
207	Youngstown State Univ.	OH	0.38	760	0.10	0.30	0.297	0.083
208	Northwestern University	IL	0.90	1240	0.90	0.09	0.817	0.083
209	South Carolina State Univ.	SC	0.44	693	0.90	0.10	0.358	0.082
210	Le Moyne College	NY	0.76	1080	0.90	0.20	0.678	0.082
211	Univ. of Missouri-St.Louis	MO	0.48	910	0.00	0.56	0.398	0.082
212	Houston Baptist University	TX	0.52	911	0.20	0.26	0.439	0.081
213	Washburn University	KS	0.42	820	0.10	0.48	0.340	0.080
214	Hawaii Pacific Univ.	HI	0.55	967	0.10	0.30	0.471	0.079
215	Russell Sage College	NY	0.66	990	0.80	0.37	0.582	0.078
216	U.of Illinois-Urbana-Champaign	IL	0.79	1146	0.70	0.08	0.712	0.078
217	Mississippi State Univ.	MS	0.51	910	0.10	0.10	0.432	0.078

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218	Auburn University	AL	0.68	1080	0.30	0.09	0.602	0.078
219	Brown University	RI	0.93	1280	0.90	0.05	0.853	0.077
220	The Citadel	SC	0.70	1010	0.90	0.12	0.623	0.077
221	Albertus Magnus College	CT	0.54	880	0.60	0.35	0.463	0.077
222	Morningside College	IA	0.48	850	0.30	0.22	0.403	0.077
223	Rollins College	FL	0.75	1085	0.90	0.40	0.674	0.076
224	St. John's Univ.	MN	0.72	1030	0.90	0.03	0.644	0.076
225	Muskingum College	OH	0.61	900	0.90	0.04	0.534	0.076
226	Alma College	MI	0.76	1078	0.90	0.02	0.684	0.076
227	Clemson University	SC	0.72	1032	0.90	0.05	0.644	0.076
228	Wheaton College	IL	0.82	1150	0.90	0.02	0.745	0.075
229	University Charleston	WV	0.46	840	0.30	0.45	0.385	0.075
230	Caldwell College	NJ	0.45	800	0.50	0.52	0.375	0.075
231	Duke University	NC	0.95	1305	0.90	0.01	0.875	0.075
232	Ohio University	OH	0.70	1010	0.90	0.06	0.626	0.074
233	Green Mountain College	VT	0.61	900	0.90	0.00	0.536	0.074
234	Coe College	IA	0.66	970	0.90	0.20	0.586	0.074
235	College of St. Joseph	VT	0.48	802	0.70	0.47	0.406	0.074
236	University of San Diego	CA	0.70	1026	0.80	0.04	0.626	0.074
237	Polytechnic University	NY	0.65	1085	0.10	0.16	0.576	0.074
238	Lynchburg College	VA	0.62	920	0.90	0.14	0.546	0.074
239	U. Of Maine-Fort Kent	ME	0.41	810	0.10	0.36	0.337	0.073
240	Lincoln Memorial Univ	TN	0.47	850	0.30	0.37	0.397	0.073
241	St. Mary's	MD	0.74	1066	0.90	0.19	0.667	0.073
242	Univ.California-Berkeley	CA	0.79	1185	0.50	0.10	0.717	0.073
243	Judson College	AL	0.56	880	0.70	0.11	0.487	0.073
244	New Mexico State Univ.	NM	0.41	790	0.20	0.27	0.337	0.073
245	Bowling Green State Univ	OH	0.63	930	0.90	0.08	0.558	0.072
246	Elmhurst College	IL	0.54	890	0.60	0.44	0.468	0.072
247	University of Rhode Island	RI	0.65	961	0.90	0.21	0.578	0.072
248	College of St. Mary	NE	0.50	850	0.60	0.58	0.428	0.072
249	St. Olaf College	MN	0.80	1130	0.90	0.02	0.728	0.072
250	Williams College	MA	0.96	1321	0.90	0.01	0.889	0.071
251	Kutztown Univ of Penn	PA	0.52	884	0.40	0.13	0.449	0.071
252	Central Michigan University	MI	0.56	850	0.90	0.10	0.489	0.071
253	Univ. of Wisconsin-Whitewater	WI	0.56	850	0.90	0.10	0.489	0.071
254	Ohio Dominican College	OH	0.42	760	0.50	0.34	0.349	0.071
255	Gustavus-Adolphus	MN	0.79	1120	0.90	0.02	0.720	0.070
256	St. Mary of the Woods	IN	0.59	919	0.90	0.73	0.520	0.070
257	Trinity College	DC	0.64	970	0.90	0.56	0.570	0.070
258	Gettysburg	PA	0.79	1120	0.90	0.01	0.720	0.070
259	Ferris State University	MI	0.43	730	0.70	0.12	0.361	0.069
260	Dartmouth University	NH	0.94	1300	0.90	0.01	0.871	0.069
261	Hobart-William Smith	NY	0.78	1110	0.90	0.00	0.712	0.068
262	University of Michigan-Dearborn	MI	0.50	945	0.00	0.46	0.432	0.068
263	CUNY-College of Staten Island	NY	0.46	900	0.00	0.51	0.392	0.068
264	Concordia College	NE	0.61	910	0.90	0.03	0.543	0.067
265	Ohio State Univ.-Columbus	OH	0.61	981	0.50	0.16	0.543	0.067
266	St. Mary's Univ. of San Antonio	TX	0.61	949	0.70	0.14	0.544	0.066
267	Dominican Col.-Blauvelt	NY	0.36	770	0.10	0.57	0.294	0.066
268	Wilkes University	PA	0.58	950	0.50	0.22	0.514	0.066
269	Baylor University	TX	0.70	1020	0.90	0.05	0.634	0.066
270	Bates College	ME	0.87	1220	0.90	0.00	0.805	0.065
271	Ball State University	IN	0.58	881	0.90	0.12	0.515	0.065
272	Univ of California-Irvine	CA	0.68	1030	0.70	0.07	0.615	0.065
273	University of Michigan	MI	0.85	1200	0.90	0.06	0.785	0.065
274	U. of Maine-Farmington	ME	0.47	901	0.00	0.23	0.405	0.065
275	St. Josephs University	PA	0.74	1100	0.80	0.34	0.675	0.065
276	Amherst College	MA	0.95	1317	0.90	0.00	0.886	0.064
277	Louisina State U. Shrevport	LA	0.32	730	0.00	0.35	0.257	0.063
278	Davidson	NC	0.91	1270	0.90	0.00	0.847	0.063
279	Wellesley College	MA	0.89	1250	0.90	0.07	0.827	0.063
280	Bloomsburg U. of Pennsylvania	PA	0.66	980	0.90	0.14	0.597	0.063
281	Maryville Univ. of St. Louis	MO	0.50	880	0.50	0.64	0.437	0.063
282	La Rouche College	PA	0.47	810	0.70	0.59	0.407	0.063
283	Wilberforce Univiversity	OH	0.39	670	0.80	0.01	0.329	0.061
284	Middlebury College	VT	0.89	1250	0.90	0.01	0.829	0.061
285	Valparaiso University	IN	0.72	1051	0.90	0.07	0.660	0.060
286	Rutgers-Newark	NJ	0.58	1010	0.20	0.32	0.520	0.060
287	Lehigh University	PA	0.86	1215	0.90	0.01	0.800	0.060
288	Hood College	MD	0.65	981	0.90	0.31	0.590	0.060
289	Willamette University	OR	0.76	1100	0.90	0.08	0.700	0.060
290	Mary Baldwin College	VA	0.64	960	0.90	0.13	0.581	0.059

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291	Bethel College	KS	0.48	770	0.90	0.14	0.421	0.059
292	University of Vermont	VT	0.73	1071	0.90	0.20	0.671	0.059
293	Wartburg	IA	0.63	945	0.90	0.06	0.571	0.059
294	Milikin University	IL	0.63	945	0.90	0.06	0.571	0.059
295	Mount Union College	OH	0.64	955	0.90	0.02	0.581	0.059
296	Juniata College	PA	0.74	1075	0.90	0.03	0.681	0.059
297	Southeastern Oklahoma State	OK	0.39	730	0.50	0.17	0.332	0.058
298	Lander University	SC	0.48	851	0.40	0.12	0.422	0.058
299	Wheaton College	MA	0.71	1040	0.90	0.03	0.652	0.058
300	Miami University-Oxford	OH	0.81	1160	0.90	0.04	0.752	0.058
301	Texas A&M University	TX	0.67	1043	0.60	0.07	0.612	0.058
302	Washington University	MO	0.85	1218	0.90	0.23	0.793	0.057
303	Iowa State University	IA	0.62	969	0.70	0.08	0.563	0.057
304	Catholic University of America	DC	0.75	1092	0.90	0.07	0.694	0.056
305	St. Louis University	MO	0.60	1000	0.50	0.50	0.544	0.056
306	Univ. North Carolina-Charlotte	NC	0.56	938	0.50	0.21	0.505	0.055
307	Xavier University of Louisiana	LA	0.44	804	0.40	0.07	0.385	0.055
308	Lesley College	MA	0.53	840	0.90	0.24	0.475	0.055
309	UCLA	CA	0.77	1117	0.90	0.07	0.715	0.055
310	Skidmore College	NY	0.78	1130	0.90	0.09	0.725	0.055
311	Messiah College	PA	0.71	1043	0.90	0.02	0.655	0.055
312	Indiana University-Bloomington	IN	0.68	1011	0.90	0.09	0.625	0.055
313	Bellarmine College	KY	0.61	1005	0.60	0.65	0.555	0.055
314	Harvard University	MA	0.97	1370	0.90	0.35	0.915	0.055
315	Coker College	SC	0.55	900	0.70	0.31	0.495	0.055
316	Bradley University	IL	0.67	1000	0.90	0.10	0.615	0.055
317	California State-Fullerton	CA	0.45	879	0.10	0.34	0.396	0.054
318	Ursinas College	PA	0.74	1106	0.90	0.53	0.686	0.054
319	Marist College	NY	0.64	970	0.90	0.20	0.586	0.054
320	Smith College	MA	0.84	1200	0.90	0.04	0.786	0.054
321	William Paterson Col. of NJ	NJ	0.46	873	0.20	0.29	0.406	0.054
322	Puget Sound	WA	0.73	1070	0.90	0.05	0.676	0.054
323	Pittsburgh State Univ	KS	0.45	820	0.40	0.11	0.396	0.054
324	University of Denver	CO	0.69	1060	0.70	0.15	0.637	0.053
325	University of Richmond	VA	0.82	1189	0.90	0.27	0.767	0.053
326	University of New Hampshire	NH	0.74	1086	0.90	0.12	0.687	0.053
327	Univ. of Maryland-College Park	MD	0.66	1057	0.50	0.16	0.607	0.053
328	Univ. of South Carolina	SC	0.62	993	0.60	0.15	0.567	0.053
329	Simpson College	IA	0.61	945	0.90	0.38	0.557	0.053
330	Walsh University	OH	0.49	883	0.40	0.38	0.438	0.052
331	St Joseph's College	IN	0.55	893	0.70	0.12	0.498	0.052
332	Mount Vernon Nazarene	OH	0.49	820	0.70	0.09	0.438	0.052
333	Colgate University	NY	0.89	1260	0.90	0.00	0.838	0.052
334	Linfield College	OR	0.66	1001	0.90	0.28	0.608	0.052
335	Georgetown University	DC	0.90	1292	0.80	0.05	0.849	0.051
336	Mercyhurst College	PA	0.59	914	0.90	0.18	0.540	0.050
337	Vanderbilt University	TN	0.83	1191	0.90	0.01	0.780	0.050
338	Cumberland College	KY	0.53	870	0.70	0.07	0.481	0.049
339	Morgan State University	MD	0.30	665	0.30	0.16	0.251	0.049
340	University of Washington	WA	0.68	1087	0.50	0.19	0.631	0.049
341	Vassar College	NY	0.88	1255	0.90	0.07	0.831	0.049
342	Southwestern Oklahoma State U	OK	0.37	700	0.60	0.15	0.321	0.049
343	Bowdoin College	ME	0.92	1300	0.90	0.01	0.871	0.049
344	Carleton College	MN	0.90	1276	0.90	0.00	0.852	0.048
345	Lambuth University	TN	0.43	790	0.50	0.17	0.382	0.048
346	Lafayette	PA	0.84	1212	0.90	0.13	0.792	0.048
347	Centre College	KY	0.76	1110	0.90	0.00	0.712	0.048
348	SUNY Col. Arts & Sci. Geneseo	NY	0.74	1136	0.60	0.03	0.692	0.048
349	Greenville College	IL	0.50	820	0.80	0.05	0.453	0.047
350	Loyola University Chicago	IL	0.62	995	0.70	0.35	0.573	0.047
351	Scripps	CA	0.75	1100	0.90	0.01	0.703	0.047
352	Princeton University	NJ	0.95	1339	0.90	0.02	0.904	0.046
353	Hartwick College	NY	0.69	1030	0.90	0.03	0.644	0.046
354	Marian College	IN	0.50	850	0.70	0.30	0.454	0.046
355	Aurora University	IL	0.44	790	0.70	0.51	0.394	0.046
356	St. Ambrose University	IA	0.54	880	0.80	0.26	0.494	0.046
357	Marymount Coll.-Tarrytown	NY	0.52	890	0.60	0.29	0.474	0.046
358	Lycoming College	PA	0.59	930	0.80	0.07	0.544	0.046
359	Salem-Teikyo Univ.	WV	0.49	792	0.90	0.01	0.445	0.045
360	Alvernia College	PA	0.49	825	0.80	0.33	0.445	0.045
361	Ithaca College	NY	0.71	1055	0.90	0.02	0.665	0.045
362	Mississippi U. for Women	MS	0.46	840	0.50	0.37	0.415	0.045
363	Wabash College	IN	0.79	1150	0.90	0.00	0.746	0.044

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364	Barnard College	NY	0.87	1247	0.90	0.03	0.826	0.044
365	Randolph-Macon	VA	0.67	1008	0.90	0.01	0.626	0.044
366	Buena Vista University	IA	0.61	945	0.90	0.17	0.566	0.044
367	Mount Mercy College	IA	0.52	880	0.70	0.36	0.476	0.044
368	Hampden-Sydney	VA	0.73	1080	0.90	0.00	0.687	0.043
369	Allegheny College	PA	0.74	1093	0.90	0.02	0.697	0.043
370	Southern Univ. & A&M College	LA	0.26	605	0.40	0.08	0.217	0.043
371	Hastings College	NE	0.56	880	0.90	0.04	0.517	0.043
372	St. Peter's College	NJ	0.50	922	0.30	0.37	0.457	0.043
373	Tufts University	MA	0.88	1260	0.90	0.01	0.838	0.042
374	University of Oregon	OR	0.61	992	0.60	0.11	0.568	0.042
375	Westfield State College	MA	0.60	940	0.90	0.26	0.558	0.042
376	Wheeling Jesuit College	WV	0.61	968	0.80	0.26	0.568	0.042
377	Harding Univ.	AR	0.60	929	0.90	0.04	0.558	0.042
378	Appalachian State Univ	NC	0.62	956	0.90	0.10	0.578	0.042
379	Marshall University	WV	0.38	790	0.20	0.24	0.339	0.041
380	Ohio Wesleyan	OH	0.71	1060	0.90	0.02	0.669	0.041
381	SUNY College-Fredonia	NY	0.65	992	0.90	0.08	0.610	0.040
382	Bridgewater State College	MA	0.51	901	0.50	0.30	0.470	0.040
383	Earlham College	IN	0.76	1120	0.90	0.00	0.721	0.039
384	Barry University	FL	0.53	975	0.30	0.62	0.491	0.039
385	University of Central Florida	FL	0.54	1022	0.00	0.37	0.501	0.039
386	Ashland University	OH	0.52	865	0.80	0.27	0.481	0.039
387	Mary Washington College	VA	0.71	1071	0.90	0.18	0.672	0.038
388	Univ. of Nebraska-Lincoln	NE	0.51	880	0.60	0.16	0.472	0.038
389	University of the Ozarks	AR	0.43	800	0.50	0.14	0.392	0.038
390	Univ. of North Dakota	ND	0.47	880	0.30	0.14	0.432	0.038
391	Bluefield College	VA	0.43	800	0.50	0.13	0.392	0.038
392	South Dakota State Univ.	SD	0.55	880	0.90	0.15	0.512	0.038
393	Manchester College	IN	0.60	933	0.90	0.02	0.563	0.037
394	Drake University	IA	0.64	989	0.90	0.18	0.603	0.037
395	Rutgers-New Brunswick	NJ	0.76	1130	0.90	0.14	0.723	0.037
396	Univ. of Wisconsin-Madison	WI	0.72	1083	0.90	0.15	0.683	0.037
397	McKendree College	IL	0.45	820	0.60	0.33	0.414	0.036
398	Louisiana State U.-Baton Rouge	LA	0.47	850	0.50	0.14	0.434	0.036
399	Univ. of Conneticut	CT	0.70	1063	0.90	0.20	0.664	0.036
400	Marian College of Fond du Lac	WI	0.45	810	0.60	0.13	0.414	0.036
401	Roger Williams Univ	RI	0.51	866	0.80	0.44	0.475	0.035
402	University of New England	ME	0.58	950	0.70	0.14	0.545	0.035
403	West Liberty State Coll.	WV	0.41	730	0.80	0.11	0.375	0.035
404	David Lipscomb univ.	TN	0.52	880	0.70	0.16	0.485	0.035
405	Univ. of California-Davis	CA	0.74	1107	0.90	0.10	0.705	0.035
406	Mt. St. Mary's College	CA	0.62	1013	0.60	0.11	0.585	0.035
407	Aquinas College	MI	0.51	850	0.90	0.41	0.476	0.034
408	Evangel College	MO	0.55	896	0.80	0.07	0.516	0.034
409	Sweet Briar College	VA	0.66	1010	0.90	0.05	0.626	0.034
410	Towson State University	MD	0.58	975	0.60	0.27	0.547	0.033
411	Lake Erie College	OH	0.58	984	0.60	0.44	0.547	0.033
412	Swarthmore College	PA	0.93	1330	0.90	0.00	0.897	0.033
413	Florida A&M Univ.	FL	0.39	839	0.00	0.14	0.357	0.033
414	Mt. Holyoke	MA	0.82	1200	0.90	0.01	0.787	0.033
415	Jackson State Univ.	MS	0.33	700	0.40	0.07	0.297	0.033
416	Emory & Henry College	VA	0.59	929	0.90	0.06	0.558	0.032
417	Loras College	IA	0.51	850	0.80	0.06	0.478	0.032
418	College of New Rochelle	NY	0.50	830	0.90	0.20	0.468	0.032
419	Univ. of California-Santa Cruz	CA	0.65	1083	0.40	0.07	0.619	0.031
420	University of Georgia	GA	0.66	1033	0.80	0.11	0.629	0.031
421	Wittenberg College	OH	0.70	1060	0.90	0.02	0.669	0.031
422	Hollins College	VA	0.66	1015	0.90	0.07	0.629	0.031
423	Stanford University	CA	0.93	1333	0.90	0.00	0.899	0.031
424	California State-Chico	CA	0.56	915	0.80	0.12	0.530	0.030
425	Univ. of California-San Diego	CA	0.74	1110	0.90	0.05	0.710	0.030
426	Pacific Lutheran University	WA	0.65	1006	0.90	0.11	0.620	0.030
427	Keene State College	NH	0.56	902	0.90	0.17	0.530	0.030
428	Pomona College	CA	0.91	1310	0.90	0.00	0.880	0.030
429	Allentown St. Francis de Sales	PA	0.61	970	0.90	0.33	0.580	0.030
430	Winstom-Salem State Univ.	NC	0.36	700	0.70	0.24	0.330	0.030
431	Geneva College	PA	0.57	930	0.80	0.16	0.541	0.029
432	Philadelphia Col. of Textiles/Sci.	PA	0.55	935	0.70	0.39	0.521	0.029
433	Yale University	CT	0.95	1360	0.90	0.02	0.921	0.029
434	Dowling College	NY	0.36	816	0.10	0.60	0.331	0.029
435	SUNY-Albany	NY	0.76	1139	0.90	0.12	0.731	0.029
436	Univ. of California-Santa Barbara	CA	0.70	1079	0.80	0.03	0.671	0.029

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437	Cornell University	NY	0.89	1288	0.90	0.00	0.862	0.028
438	Haverford College	PA	0.90	1300	0.90	0.00	0.872	0.028
439	St. Mary's Coll. of Cal	CA	0.65	1006	0.90	0.07	0.622	0.028
440	Western New England College	MA	0.53	895	0.80	0.37	0.502	0.028
441	University of Hawaii-Manoa	HI	0.60	984	0.70	0.17	0.572	0.028
442	Grand Valley State Univ	MI	0.47	850	0.60	0.26	0.442	0.028
443	Rhode Island College	RI	0.44	867	0.30	0.34	0.412	0.028
444	Austin College	TX	0.70	1064	0.90	0.02	0.673	0.027
445	Houghton College	NY	0.72	1089	0.90	0.04	0.693	0.027
446	Knox College	IL	0.73	1100	0.90	0.02	0.703	0.027
447	Univ. of Texas-Austin	TX	0.65	1091	0.40	0.13	0.623	0.027
448	Seton Hill College	PA	0.56	912	0.90	0.29	0.533	0.027
449	Columbia College	SC	0.54	899	0.80	0.18	0.514	0.026
450	Spring Arbor College	MI	0.46	790	0.90	0.21	0.434	0.026
451	Glenville State College	WV	0.39	760	0.60	0.31	0.364	0.026
452	E. Mennonite Univ	VA	0.60	950	0.90	0.08	0.574	0.026
453	University of Rochester	NY	0.77	1152	0.90	0.07	0.744	0.026
454	University of Indianapolis	IN	0.51	899	0.70	0.54	0.484	0.026
455	Briar Cliff College	IA	0.49	830	0.90	0.28	0.465	0.025
456	Lincoln University	PA	0.45	770	0.90	0.03	0.425	0.025
457	Longwood College	VA	0.57	915	0.90	0.05	0.546	0.024
458	Western Michigan Univ	MI	0.52	880	0.80	0.21	0.496	0.024
459	Rice University	TX	0.89	1328	0.70	0.04	0.867	0.023
460	Lake Superior State University	MI	0.39	790	0.40	0.20	0.367	0.023
461	University of Pennsylvania	PA	0.87	1280	0.90	0.16	0.848	0.022
462	University of Pittsburgh	PA	0.65	1024	0.90	0.27	0.628	0.022
463	Andrews University	MI	0.47	820	0.80	0.16	0.448	0.022
464	Drury College	MO	0.58	1003	0.60	0.53	0.559	0.021
465	University of Alabama	AL	0.57	952	0.70	0.08	0.549	0.021
466	Claremont-Mckeena	CA	0.85	1250	0.90	0.00	0.830	0.020
467	Brescia College	KY	0.47	880	0.50	0.35	0.450	0.020
468	Cansius College	NY	0.59	1012	0.50	0.14	0.570	0.020
469	Washington State Univ	WA	0.62	980	0.90	0.07	0.600	0.020
470	Univ. of Findlay	OH	0.48	870	0.60	0.23	0.460	0.020
471	Univ. of Wisconsin-Stout	WI	0.51	850	0.90	0.08	0.490	0.020
472	Franciscan U. of Steubenville	OH	0.59	948	0.90	0.13	0.570	0.020
473	Touro College	NY	0.57	1050	0.10	0.08	0.551	0.019
474	University of Utah	UT	0.44	910	0.10	0.36	0.421	0.019
475	North Carolina State U. Raleigh	NC	0.67	1052	0.90	0.29	0.651	0.019
476	Northern State University	SD	0.41	790	0.60	0.28	0.391	0.019
477	Occidental College	CA	0.79	1180	0.90	0.00	0.771	0.019
478	University of Portland	OR	0.60	974	0.80	0.08	0.581	0.019
479	Milligan College	TN	0.48	960	0.00	0.09	0.461	0.019
480	Missouri Baptist College	MO	0.33	790	0.10	0.56	0.311	0.019
481	Goucher College	MD	0.65	1020	0.90	0.11	0.632	0.018
482	Winthrop University	SC	0.50	859	0.80	0.13	0.482	0.018
483	Virginia Tech	VA	0.73	1112	0.90	0.03	0.713	0.017
484	Millersville U. of Pennsylvania	PA	0.63	1004	0.90	0.24	0.613	0.017
485	Bryn Mawr College	PA	0.87	1280	0.90	0.05	0.853	0.017
486	U of Maryland-Baltimore County	MD	0.56	971	0.60	0.28	0.543	0.017
487	West Virginia Inst Tech	WV	0.41	820	0.40	0.19	0.393	0.017
488	Grand View College	IA	0.30	760	0.00	0.32	0.283	0.017
489	Colby-Sawyer College	NH	0.55	901	0.90	0.07	0.534	0.016
490	Midland Lutheran College	NE	0.49	880	0.60	0.11	0.474	0.016
491	Ouachita Baptist Univ	AR	0.52	880	0.80	0.03	0.504	0.016
492	Illinois State Univ	IL	0.53	880	0.90	0.10	0.515	0.015
493	Grinnell College	IA	0.85	1257	0.90	0.01	0.835	0.015
494	California State-Stanislaus	CA	0.42	877	0.20	0.38	0.406	0.014
495	Johns Hopkins University	MD	0.87	1300	0.90	0.36	0.856	0.014
496	Whitman College	WA	0.75	1140	0.90	0.03	0.736	0.014
497	St. Cloud State Univ	MN	0.46	850	0.60	0.16	0.446	0.014
498	University of the Pacific	CA	0.60	965	0.90	0.09	0.586	0.014
499	Morehouse College	GA	0.55	920	0.80	0.05	0.537	0.013
500	Northwestern Collge	IA	0.53	880	0.90	0.04	0.517	0.013
501	Frostberg State University	MD	0.53	900	0.80	0.10	0.518	0.012
502	Campbell University	NC	0.47	848	0.70	0.16	0.458	0.012
503	Liberty Univiversity	VA	0.36	852	0.00	0.58	0.349	0.011
504	Kalamazoo College	MI	0.74	1130	0.90	0.00	0.729	0.011
505	Mars Hill College	NC	0.50	854	0.90	0.18	0.489	0.011
506	Bethune-Cookman College	FL	0.33	662	0.80	0.07	0.319	0.011
507	University of San Francisco	CA	0.56	953	0.70	0.09	0.549	0.011
508	East Carolina Univ	NC	0.49	857	0.80	0.15	0.480	0.010
509	Univ. of Missouri-Columbia	MO	0.58	945	0.90	0.08	0.570	0.010

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510	Butler University	IN	0.65	1030	0.90	0.11	0.640	0.010
511	Elon College	NC	0.56	922	0.90	0.09	0.550	0.010
512	Howard Univ.	DC	0.46	885	0.40	0.12	0.451	0.009
513	St. Francis College	PA	0.56	950	0.80	0.31	0.551	0.009
514	Central Connecticut State Un	CT	0.47	880	0.60	0.40	0.461	0.009
515	National-Louis University	IL	0.38	840	0.10	0.15	0.371	0.009
516	St. John Fisher College	NY	0.60	996	0.80	0.27	0.591	0.009
517	Lenoir-Rhyne College	NC	0.57	953	0.80	0.12	0.562	0.008
518	Wesleyan College	CT	0.88	1300	0.90	0.00	0.872	0.008
519	Westbrook College	ME	0.42	823	0.60	0.43	0.412	0.008
520	Central Missouri State Univ	MO	0.38	760	0.60	0.13	0.372	0.008
521	Western Carolina University	NC	0.48	848	0.80	0.13	0.473	0.007
522	Montclair State University	NJ	0.55	974	0.60	0.33	0.543	0.007
523	U. of North Carolina-Pembroke	NC	0.40	820	0.40	0.18	0.393	0.007
524	University of Hartford	CT	0.56	934	0.90	0.25	0.553	0.007
525	Niagara University	NY	0.54	920	0.80	0.13	0.533	0.007
526	Jersey City State College	NJ	0.33	800	0.10	0.47	0.324	0.006
527	Concordia College	NY	0.45	838	0.70	0.29	0.444	0.006
528	Cornell	IA	0.65	1029	0.90	0.00	0.644	0.006
529	Worcester State College	MA	0.41	848	0.40	0.46	0.405	0.005
530	SUNY-Plattsburgh	NY	0.60	976	0.90	0.10	0.595	0.005
531	Samford University	AL	0.53	943	0.60	0.14	0.525	0.005
532	College of Notre Dame	CA	0.48	881	0.70	0.40	0.475	0.005
533	North Central College	IL	0.58	985	0.80	0.41	0.576	0.004
534	North Carolina Central Univ	NC	0.38	750	0.70	0.16	0.376	0.004
535	Transylvania	KY	0.64	1025	0.90	0.10	0.636	0.004
536	U. of North Carolina-Wilmington	NC	0.51	907	0.70	0.19	0.506	0.004
537	Albright	PA	0.70	1107	0.90	0.30	0.697	0.003
538	Pine Manor College	MA	0.45	800	0.90	0.12	0.447	0.003
539	Radford University	VA	0.57	940	0.90	0.04	0.568	0.002
540	Southern Methodist University	TX	0.69	1084	0.90	0.06	0.688	0.002
541	Murray State Univ	KY	0.45	850	0.60	0.13	0.448	0.002
542	Nyack College	NY	0.50	875	0.80	0.08	0.498	0.002
543	Webster University	MO	0.45	900	0.40	0.46	0.448	0.002
544	Oakland City Univ	IN	0.42	800	0.70	0.15	0.418	0.002
545	Park College	MO	0.37	760	0.70	0.52	0.369	0.001
546	Morehead State University	KY	0.40	790	0.60	0.10	0.399	0.001
547	Univ. of Southern California	CA	0.65	1056	0.80	0.10	0.649	0.001
548	Arkansas Tech University	AR	0.34	820	0.00	0.19	0.339	0.001
549	Florida State University	FL	0.65	1059	0.80	0.14	0.650	0.000
550	Beloit College	WI	0.70	1100	0.90	0.09	0.700	0.000
551	Wilson College	PA	0.54	960	0.80	0.75	0.540	0.000
552	Concord College	WV	0.34	760	0.40	0.24	0.340	0.000
553	Thiel College	PA	0.47	862	0.70	0.15	0.470	0.000
554	Mayville State Univ	ND	0.40	760	0.80	0.10	0.400	0.000
555	University of Iowa	IA	0.60	985	0.90	0.15	0.601	-0.001
556	Gordon College	MA	0.65	1039	0.90	0.04	0.651	-0.001
557	Emporia State Univ	KS	0.41	790	0.70	0.13	0.411	-0.001
558	East Central University	OK	0.32	730	0.40	0.11	0.321	-0.001
559	New Mexico Highlands Univ	NM	0.24	640	0.40	0.21	0.241	-0.001
560	Furman	SC	0.77	1190	0.90	0.19	0.771	-0.001
561	Doanne College	NE	0.52	910	0.80	0.22	0.521	-0.001
562	Univ. of S. Carolina-Aiken	SC	0.39	875	0.10	0.36	0.391	-0.001
563	Westmont College	CA	0.61	990	0.90	0.00	0.611	-0.001
564	Roosevelt University	IL	0.38	880	0.10	0.68	0.381	-0.001
565	Hofstra University	NY	0.57	1015	0.50	0.16	0.572	-0.002
566	Texas Christian Univ	TX	0.60	985	0.90	0.12	0.602	-0.002
567	Fairmont State College	WV	0.27	730	0.10	0.30	0.272	-0.002
568	Mankato State University	MN	0.47	850	0.80	0.18	0.472	-0.002
569	Southwest State Univ	MN	0.39	820	0.40	0.20	0.393	-0.003
570	Bloomfield College	NJ	0.28	700	0.40	0.40	0.283	-0.003
571	University of Akron	OH	0.40	873	0.20	0.36	0.403	-0.003
572	Heidelberg College	OH	0.55	930	0.90	0.18	0.553	-0.003
573	University of Chicago	IL	0.86	1291	0.90	0.01	0.864	-0.004
574	Trenton State College	NJ	0.70	1110	0.90	0.19	0.704	-0.004
575	Valley City State	ND	0.34	760	0.40	0.16	0.344	-0.004
576	Hamline University	MN	0.63	1020	0.90	0.05	0.634	-0.004
577	Siena Heights College	MI	0.40	820	0.60	0.54	0.405	-0.005
578	Olivet Nazarene University	IL	0.46	820	0.90	0.09	0.465	-0.005
579	Northwestern College	MN	0.46	850	0.70	0.05	0.465	-0.005
580	Walla Walla College	WA	0.43	820	0.70	0.15	0.435	-0.005
581	Middle Tennessee State Univ	TN	0.40	850	0.30	0.17	0.406	-0.006
582	Salisbury State University	MD	0.54	938	0.80	0.19	0.546	-0.006

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583	U. of Pittsburgh-Johnstown	PA	0.60	1025	0.70	0.18	0.606	-0.006
584	Univ. of Wisconsin-Oskosh	WI	0.48	850	0.90	0.17	0.486	-0.006
585	Fort Hays State Univ.	KS	0.40	820	0.50	0.18	0.407	-0.007
586	Rivier College	NH	0.42	886	0.40	0.68	0.427	-0.007
587	Fayetteville State Univ.	NC	0.29	673	0.60	0.17	0.297	-0.007
588	Jacksonville State Univ.	AL	0.30	700	0.50	0.14	0.308	-0.008
589	Concordia College	MI	0.50	868	0.90	0.02	0.508	-0.008
590	North Carolina A&T State Univ	NC	0.42	780	0.90	0.14	0.429	-0.009
591	Southeast Missouri State Univ.	MO	0.36	790	0.40	0.16	0.369	-0.009
592	Friends University	KS	0.32	790	0.10	0.15	0.329	-0.009
593	Bridgewater College	VA	0.57	954	0.90	0.04	0.579	-0.009
594	Virginia Commonwealth Univ.	VA	0.46	981	0.00	0.30	0.469	-0.009
595	Nazareth College of Rochester	NY	0.58	993	0.80	0.25	0.590	-0.010
596	Pitzer College	CA	0.71	1125	0.90	0.12	0.720	-0.010
597	Rhodes college	TN	0.76	1181	0.90	0.05	0.770	-0.010
598	University of Evansville	IN	0.60	1000	0.90	0.23	0.610	-0.010
599	Univ. of Tennessee-Knoxville	TN	0.48	870	0.80	0.16	0.490	-0.010
600	VMI	VA	0.66	1060	0.90	0.00	0.670	-0.010
601	Northern Illinois Univ	IL	0.53	910	0.90	0.09	0.540	-0.010
602	Gonzaga University	WA	0.60	994	0.90	0.10	0.610	-0.010
603	Erskine College	SC	0.61	1002	0.90	0.02	0.621	-0.011
604	West Virginia State Col.	WV	0.23	700	0.10	0.44	0.241	-0.011
605	Wichita State Univ.	KS	0.33	820	0.10	0.45	0.341	-0.011
606	George Washington University	DC	0.69	1110	0.90	0.25	0.701	-0.011
607	University of Laverne	CA	0.46	916	0.50	0.55	0.471	-0.011
608	Belhaven College	MS	0.42	840	0.60	0.31	0.431	-0.011
609	Indiana Univ. of Pennsylvania	PA	0.60	1028	0.70	0.11	0.612	-0.012
610	Regis University	CO	0.46	920	0.50	0.62	0.472	-0.012
611	Elmira College	NY	0.50	891	0.90	0.37	0.512	-0.012
612	Elizabethan College	PA	0.64	1048	0.90	0.18	0.652	-0.012
613	Clarkson University	NY	0.72	1135	0.90	0.02	0.732	-0.012
614	John Brown University	AR	0.53	930	0.80	0.11	0.543	-0.013
615	Univ. of Wisconsin-Platteville	WI	0.50	880	0.90	0.14	0.513	-0.013
616	Delaware Valley College	PA	0.50	893	0.80	0.07	0.513	-0.013
617	Univ. of Cincinnati	OH	0.48	979	0.20	0.33	0.493	-0.013
618	Univ. of Massachusetts-Amherst	MA	0.65	1058	0.90	0.11	0.664	-0.014
619	St. Mary College	KS	0.45	880	0.70	0.64	0.464	-0.014
620	Wesley College	DE	0.48	880	0.80	0.26	0.494	-0.014
621	Immaculata College	PA	0.54	960	0.90	0.72	0.555	-0.015
622	Auburn University-Montgomery	AL	0.35	850	0.00	0.18	0.365	-0.015
623	Cumberland University	TN	0.31	760	0.30	0.29	0.325	-0.015
624	MIT	MA	0.89	1340	0.90	0.01	0.905	-0.015
625	Hanover College	IN	0.63	1030	0.90	0.00	0.645	-0.015
626	Bethany College	WV	0.57	960	0.90	0.02	0.585	-0.015
627	North Georgia College	GA	0.46	915	0.40	0.13	0.475	-0.015
628	Calif. State-Long Beach	CA	0.36	870	0.00	0.32	0.375	-0.015
629	Oberlin College	OH	0.80	1235	0.90	0.04	0.815	-0.015
630	Northwestern State Oklahoma Univ	OK	0.31	760	0.30	0.27	0.326	-0.016
631	Mount St. Mary College	NY	0.48	900	0.70	0.30	0.496	-0.016
632	Plymouth State College	NH	0.49	870	0.90	0.11	0.506	-0.016
633	University of Wyoming	WY	0.43	880	0.40	0.13	0.446	-0.016
634	Kent State Univ.	OH	0.49	889	0.80	0.16	0.506	-0.016
635	Spring Hill College	AL	0.57	1002	0.70	0.19	0.586	-0.016
636	Southern Illinois-Edwardsville	IL	0.36	820	0.30	0.26	0.376	-0.016
637	Stetson University	FL	0.63	1050	0.80	0.03	0.647	-0.017
638	Salem State College	MA	0.40	892	0.20	0.39	0.418	-0.018
639	SUNY College-Cortland	NY	0.52	906	0.90	0.07	0.538	-0.018
640	Tulane University	LA	0.73	1166	0.90	0.24	0.749	-0.019
641	Univ. of Alabama-Huntsville	AL	0.47	985	0.20	0.55	0.489	-0.019
642	San Francisco State University	CA	0.39	895	0.10	0.34	0.409	-0.019
643	Columbia University	NY	0.88	1340	0.90	0.14	0.899	-0.019
644	Widener University	PA	0.56	1020	0.60	0.38	0.580	-0.020
645	SUNY Col. Arts & Sci. New Paltz	NY	0.51	970	0.50	0.25	0.530	-0.020
646	Keuka College	NY	0.47	852	0.90	0.13	0.490	-0.020
647	Kansas State Univ.	KS	0.48	880	0.80	0.13	0.500	-0.020
648	Old Dominion Univ.	VA	0.45	910	0.40	0.16	0.470	-0.020
649	Columbia College	MO	0.31	715	0.80	0.84	0.330	-0.020
650	U. of S. Carolina-Spartanburg	SC	0.35	849	0.10	0.34	0.370	-0.020
651	New England College	NH	0.49	880	0.90	0.19	0.511	-0.021
652	Westminster Col. of Salt Lake	UT	0.43	953	0.10	0.49	0.451	-0.021
653	Emerson College	MA	0.60	1010	0.90	0.16	0.621	-0.021
654	Rochester Inst. of Tech.	NY	0.60	1016	0.90	0.27	0.621	-0.021
655	Northern Michigan Univ.	MI	0.41	820	0.70	0.23	0.432	-0.022

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Rank	Institution	State	IGR 1995	SAT 1990	% OC 1995	%PT 1990	Predicted IGR	Difference
656	Monmouth College	IL	0.58	980	0.90	0.03	0.602	-0.022
657	Southeastern Louisiana Univ	LA	0.27	730	0.20	0.16	0.292	-0.022
658	New York University	NY	0.70	1180	0.60	0.20	0.722	-0.022
659	Trinity University	TX	0.77	1207	0.90	0.04	0.792	-0.022
660	Franklin Pierce Coll	NH	0.43	822	0.90	0.42	0.452	-0.022
661	Centenary College of Louisina	LA	0.56	990	0.70	0.05	0.582	-0.022
662	Oakland University	MI	0.40	880	0.30	0.36	0.422	-0.022
663	Wells College	NY	0.63	1040	0.90	0.02	0.653	-0.023
664	Syracuse University	NY	0.71	1140	0.90	0.11	0.733	-0.023
665	Randolph-Macon Women's	VA	0.61	1020	0.90	0.08	0.633	-0.023
666	Carthage College	WI	0.48	880	0.90	0.36	0.503	-0.023
667	Malone College	OH	0.45	850	0.80	0.16	0.473	-0.023
668	College of Charleston	SC	0.52	965	0.60	0.15	0.543	-0.023
669	Johnson C. Smith Univ	NC	0.32	672	0.90	0.02	0.343	-0.023
670	Alabama A&M University	AL	0.31	680	0.80	0.08	0.334	-0.024
671	Evergreen State Coll	WA	0.59	1014	0.80	0.09	0.614	-0.024
672	Oregon State University	OR	0.56	961	0.90	0.06	0.584	-0.024
673	West MD Coll	MD	0.60	1010	0.90	0.08	0.625	-0.025
674	Idaho State Univ	ID	0.30	790	0.10	0.25	0.325	-0.025
675	California State-Sacramento	CA	0.42	902	0.30	0.27	0.445	-0.025
676	Claflin College	SC	0.30	650	0.90	0.02	0.325	-0.025
677	Kean College of New Jersey	NJ	0.39	891	0.20	0.43	0.415	-0.025
678	East Stroudsberg Un. of Penn	PA	0.50	912	0.80	0.16	0.525	-0.025
679	Southwestern	TX	0.68	1103	0.90	0.02	0.705	-0.025
680	Baker University	KS	0.51	910	0.90	0.20	0.535	-0.025
681	Tennessee State University	TN	0.29	670	0.80	0.31	0.316	-0.026
682	Hope College	MI	0.69	1120	0.90	0.11	0.716	-0.026
683	Brigham Young Univ	UT	0.56	985	0.80	0.18	0.586	-0.026
684	Depaul University	IL	0.56	1027	0.60	0.37	0.586	-0.026
685	Austin Peay State Univ	TN	0.32	790	0.30	0.38	0.346	-0.026
686	Anderson University	IN	0.47	860	0.90	0.14	0.496	-0.026
687	California Lutheran University	CA	0.52	941	0.80	0.23	0.547	-0.027
688	Wayne State Univ	MI	0.40	925	0.10	0.51	0.427	-0.027
689	Judson College	IL	0.46	880	0.70	0.11	0.487	-0.027
690	Case Western Reserve	OH	0.71	1162	0.80	0.11	0.738	-0.028
691	Marymount University	VA	0.46	895	0.70	0.38	0.488	-0.028
692	Talladega College	AL	0.36	729	0.90	0.09	0.388	-0.028
693	Truman State Univ	MO	0.61	1025	0.90	0.05	0.639	-0.029
694	U. of Pittsburgh-Bradford	PA	0.49	912	0.80	0.31	0.519	-0.029
695	Mills College	CA	0.64	1060	0.90	0.03	0.669	-0.029
696	Bowie State University	MD	0.29	706	0.60	0.31	0.319	-0.029
697	Abilene Christian University	TX	0.46	850	0.90	0.11	0.489	-0.029
698	Christian Brothers Univ	TN	0.52	1015	0.40	0.36	0.549	-0.029
699	University of Colorado-Denver	CO	0.45	1000	0.00	0.44	0.479	-0.029
700	Missouri Southern State	MO	0.29	790	0.10	0.37	0.319	-0.029
701	SUNY-Buffalo	NY	0.60	1104	0.40	0.23	0.630	-0.030
702	Huntington College	IN	0.45	870	0.70	0.09	0.480	-0.030
703	SUNY-Stony Brook	NY	0.56	1020	0.60	0.14	0.590	-0.030
704	McNeese State Univ	LA	0.26	730	0.20	0.19	0.290	-0.030
705	Univ. of Colorado-Boulder	CO	0.66	1090	0.90	0.11	0.691	-0.031
706	Chatham College	PA	0.61	1058	0.80	0.33	0.641	-0.031
707	Eastern College	PA	0.52	950	0.80	0.31	0.551	-0.031
708	Southern Illinois U.-Carbondale	IL	0.43	880	0.50	0.10	0.461	-0.031
709	Washington Coll	MD	0.62	1040	0.90	0.05	0.651	-0.031
710	Knoxville College	TN	0.31	670	0.90	0.03	0.341	-0.031
711	Alabama State University	AL	0.17	656	0.00	0.19	0.201	-0.031
712	Guilford College	NC	0.62	1050	0.90	0.22	0.652	-0.032
713	Indiana U. Purdue U. Fort Wayne	IN	0.32	856	0.00	0.58	0.352	-0.032
714	Dakota State Univ	SD	0.38	790	0.80	0.38	0.413	-0.033
715	Univ. of Nevada-Las Vegas	NV	0.32	820	0.20	0.48	0.353	-0.033
716	Weber State University	UT	0.36	879	0.10	0.39	0.393	-0.033
717	Concordia College-St Paul	MN	0.38	790	0.70	0.07	0.413	-0.033
718	St. Thomas University	FL	0.27	740	0.30	0.39	0.304	-0.034
719	University of Detroit-Mercy	MI	0.54	1043	0.40	0.34	0.574	-0.034
720	Univ. of Wisconsin-Stevens Point	WI	0.48	880	0.90	0.12	0.514	-0.034
721	Framingham State College	MA	0.46	906	0.70	0.46	0.494	-0.034
722	Univ. of Wisconsin-Milwaukee	WI	0.35	850	0.20	0.36	0.384	-0.034
723	SUNY-Oswego	NY	0.59	1030	0.80	0.15	0.625	-0.035
724	Kentucky State Univ	KY	0.29	670	0.90	0.40	0.325	-0.035
725	Texas Women's Univ	TX	0.34	788	0.50	0.29	0.375	-0.035
726	College of St. Scholastica	MN	0.52	980	0.60	0.16	0.556	-0.036
727	Slippery Rock U. of Penn	PA	0.51	919	0.90	0.14	0.546	-0.036
728	Lawrence College	WI	0.71	1152	0.90	0.04	0.746	-0.036

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729	East Tennessee State Univ	TN	0.35	860	0.10	0.20	0.386	-0.036
730	Edgewood College	WI	0.42	849	0.80	0.53	0.456	-0.036
731	Monmouth University	NJ	0.49	923	0.80	0.35	0.526	-0.036
732	Minnesota-Morris	MN	0.63	1060	0.90	0.08	0.667	-0.037
733	Univ. of Wisconsin-Lacrosse	WI	0.44	850	0.80	0.07	0.477	-0.037
734	Northwest Nazarene Coll	ID	0.44	850	0.80	0.07	0.477	-0.037
735	Mansfield Univ. of Penn	PA	0.50	922	0.80	0.08	0.537	-0.037
736	College of St. Catherine	MN	0.56	990	0.90	0.32	0.597	-0.037
737	Missouri Western State	MO	0.30	760	0.40	0.30	0.338	-0.038
738	Southwest Missouri State	MO	0.42	850	0.70	0.20	0.458	-0.038
739	Saginaw Valley State Univ	MI	0.32	790	0.40	0.41	0.358	-0.038
740	Alfred University	NY	0.65	1090	0.90	0.16	0.688	-0.038
741	University of St. Thomas	TX	0.54	1060	0.30	0.25	0.578	-0.038
742	Lawrence Tech. Univ	MI	0.35	880	0.10	0.51	0.389	-0.039
743	Lake Forest	IL	0.63	1060	0.90	0.02	0.669	-0.039
744	Moorehead State Univ	MN	0.46	880	0.80	0.14	0.499	-0.039
745	Castleton State College	VT	0.47	909	0.70	0.16	0.509	-0.039
746	Lewis & Clark	OR	0.62	1050	0.90	0.05	0.660	-0.040
747	Western Illinois University	IL	0.46	880	0.80	0.12	0.500	-0.040
748	Louisiana Tech University	LA	0.38	820	0.60	0.18	0.420	-0.040
749	Arkansas State University	AR	0.29	760	0.30	0.16	0.330	-0.040
750	University of Mary	ND	0.38	790	0.80	0.21	0.421	-0.041
751	Westminster	MO	0.60	1029	0.90	0.07	0.641	-0.041
752	Western Connecticut State Univ	CT	0.40	890	0.40	0.42	0.442	-0.042
753	Bard College	NY	0.76	1220	0.90	0.06	0.802	-0.042
754	West Chester U. of Penn	PA	0.53	970	0.80	0.21	0.572	-0.042
755	Wayne State College	NE	0.42	820	0.90	0.14	0.463	-0.043
756	Rocky Mountain College	MT	0.45	873	0.80	0.14	0.494	-0.044
757	Bethel College	MN	0.56	1000	0.80	0.05	0.604	-0.044
758	Indiana University Northwest	IN	0.27	805	0.00	0.47	0.314	-0.044
759	Lee College	TN	0.37	790	0.70	0.05	0.414	-0.044
760	New Jersey Institute of Tech	NJ	0.54	1073	0.30	0.36	0.585	-0.045
761	University of Louisville	KY	0.30	790	0.30	0.41	0.345	-0.045
762	St. Augustine's Coll	NC	0.41	806	0.90	0.05	0.455	-0.045
763	Boston University	MA	0.71	1171	0.90	0.19	0.755	-0.045
764	Alcorn State University	MS	0.32	700	0.90	0.06	0.365	-0.045
765	Quincy University	IL	0.56	1020	0.70	0.09	0.606	-0.046
766	Calvin College	MI	0.61	1046	0.90	0.04	0.657	-0.047
767	William Carey College	MS	0.35	820	0.50	0.41	0.397	-0.047
768	Norwich University	VT	0.54	970	0.90	0.17	0.587	-0.047
769	Sam Houston University	TX	0.31	840	0.00	0.16	0.357	-0.047
770	University of Tennessee-Martin	TN	0.35	790	0.60	0.13	0.397	-0.047
771	Yeshiva University	NY	0.72	1178	0.90	0.03	0.768	-0.048
772	Eureka College	IL	0.43	850	0.80	0.05	0.478	-0.048
773	MidAmerican Nazarene College	KS	0.40	820	0.80	0.15	0.449	-0.049
774	Pepperdine University	CA	0.63	1081	0.90	0.21	0.679	-0.049
775	Francis Marion Univ	SC	0.37	849	0.40	0.14	0.420	-0.050
776	Notre Dame Col.-Ohio	OH	0.40	870	0.60	0.47	0.450	-0.050
777	Tri-State Univ	IN	0.53	960	0.90	0.14	0.580	-0.050
778	University of Toledo	OH	0.39	850	0.60	0.30	0.440	-0.050
779	Univ. of Arkansas-Fayettville	AR	0.41	880	0.50	0.11	0.460	-0.050
780	Florida Southern Coll	FL	0.49	941	0.80	0.37	0.541	-0.051
781	Univ. of Mississippi	MS	0.49	910	0.90	0.08	0.541	-0.051
782	Univ. of Alabama-Birmingham	AL	0.33	850	0.20	0.42	0.381	-0.051
783	Defiance College	OH	0.44	879	0.80	0.30	0.492	-0.052
784	Univ. of Wisconsin-Eau Claire	WI	0.52	980	0.70	0.10	0.572	-0.052
785	Univ. of Maine-Orono	ME	0.53	966	0.90	0.21	0.582	-0.052
786	Univ. of Northern Colorado	CO	0.41	820	0.90	0.14	0.463	-0.053
787	Marymount Manhatten	NY	0.36	876	0.30	0.51	0.413	-0.053
788	Southern Connecticut State Univ	CT	0.43	900	0.60	0.29	0.483	-0.053
789	St. Francis College	NY	0.39	950	0.00	0.31	0.443	-0.053
790	Michigan Technological Univ	MI	0.63	1095	0.80	0.06	0.683	-0.053
791	St. Francis College	IN	0.38	843	0.60	0.32	0.434	-0.054
792	Eckard College	FL	0.62	1065	0.90	0.01	0.674	-0.054
793	SUNY College-Oneonta	NY	0.54	973	0.90	0.07	0.594	-0.054
794	Lyndon State College	VT	0.45	900	0.70	0.11	0.504	-0.054
795	Calif. State Poly-Pomona	CA	0.40	912	0.30	0.25	0.454	-0.054
796	Bluffton College	OH	0.52	954	0.90	0.16	0.574	-0.054
797	Wingate University	NC	0.41	840	0.80	0.17	0.465	-0.055
798	Florida International Inst	FL	0.65	1240	0.20	0.51	0.705	-0.055
799	Eastern New Mexico Univ	NM	0.28	700	0.70	0.14	0.335	-0.055
800	Eastern Nazarene College	MA	0.48	903	0.90	0.07	0.535	-0.055
801	Univ. of Wisconsin-River Falls	WI	0.42	850	0.80	0.10	0.476	-0.056

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802	Univ. of Massachusetts-Lowell	MA	0.45	994	0.20	0.33	0.506	-0.056
803	Northeast Louisiana Univ.	LA	0.30	760	0.50	0.19	0.356	-0.056
804	Oklahoma Baptist Univ.	OK	0.42	880	0.70	0.36	0.476	-0.056
805	Clarke College	IA	0.60	1060	0.90	0.31	0.657	-0.057
806	University of New Orleans	LA	0.24	760	0.10	0.31	0.297	-0.057
807	U. of North Carolina-Grennsboro	NC	0.50	952	0.80	0.19	0.558	-0.058
808	University of Memphis	TN	0.34	880	0.10	0.31	0.398	-0.058
809	Tusculum College	TN	0.47	923	0.70	0.01	0.528	-0.058
810	Central State Univ	OH	0.38	857	0.50	0.17	0.438	-0.058
811	George Mason Univ	VA	0.54	1070	0.40	0.29	0.599	-0.059
812	Belmont University	TN	0.42	880	0.70	0.30	0.479	-0.059
813	Stephens College	MO	0.50	946	0.90	0.34	0.560	-0.060
814	Lock Haven U. of Penn	PA	0.54	980	0.90	0.07	0.600	-0.060
815	Stevens Institute of Tech.	NJ	0.68	1160	0.80	0.01	0.740	-0.060
816	American University	DC	0.67	1139	0.90	0.14	0.730	-0.060
817	Avila College	MO	0.44	950	0.50	0.53	0.501	-0.061
818	Huntingdon College	AL	0.52	980	0.80	0.19	0.581	-0.061
819	Western Washington University	WA	0.56	1005	0.90	0.05	0.622	-0.062
820	Albion College	MI	0.64	1100	0.90	0.02	0.703	-0.063
821	Adelphi University	NY	0.50	1030	0.40	0.32	0.564	-0.064
822	Asbury College	KY	0.50	935	0.90	0.03	0.564	-0.064
823	Roanoke College	VA	0.56	1011	0.90	0.11	0.624	-0.064
824	Franklin College	IN	0.48	930	0.80	0.07	0.544	-0.064
825	Flagler College	FL	0.52	960	0.90	0.03	0.585	-0.065
826	Pfeiffer College	NC	0.40	839	0.80	0.14	0.465	-0.065
827	Rutgers-Camden	NJ	0.51	1060	0.30	0.32	0.575	-0.065
828	Clinch Valley Col. U.VA	VA	0.33	845	0.30	0.30	0.396	-0.066
829	Allegheny University	PA	0.62	1080	0.90	0.02	0.686	-0.066
830	Mount Vernon College	DC	0.42	855	0.90	0.26	0.487	-0.067
831	Eastern Connecticut State Univ.	CT	0.44	900	0.80	0.34	0.507	-0.067
832	Wake Forest University	NC	0.87	1380	0.90	0.03	0.938	-0.068
833	Univ. Southwestern Louisiana	LA	0.27	820	0.00	0.22	0.338	-0.068
834	University of Montevallo	AL	0.42	880	0.70	0.09	0.488	-0.068
835	Univ. of Wisconsin-Green Bay	WI	0.40	880	0.60	0.23	0.469	-0.069
836	Dana College	NE	0.42	850	0.90	0.12	0.489	-0.069
837	Southern Nazarene Univ	OK	0.38	820	0.80	0.14	0.449	-0.069
838	Ottawa University	KS	0.37	790	0.90	0.10	0.439	-0.069
839	Biola University	CA	0.49	963	0.70	0.05	0.560	-0.070
840	Peru State College	NE	0.32	760	0.80	0.34	0.390	-0.070
841	St. Edwards University	TX	0.40	874	0.70	0.39	0.470	-0.070
842	Ripon College	WI	0.62	1085	0.90	0.02	0.690	-0.070
843	Bennett College	NC	0.41	835	0.90	0.02	0.480	-0.070
844	Southern Arkansas Univ	AR	0.30	790	0.40	0.13	0.370	-0.070
845	Whitworth College	WA	0.61	1080	0.90	0.15	0.680	-0.070
846	Queens College	NC	0.51	997	0.80	0.53	0.581	-0.071
847	Bemidji State University	MN	0.35	820	0.60	0.17	0.421	-0.071
848	Morris Brown College	GA	0.38	850	0.60	0.05	0.451	-0.071
849	Embry Riddle Aeronautical U	FL	0.44	1035	0.00	0.38	0.511	-0.071
850	Johnson State College	VT	0.40	849	0.80	0.18	0.472	-0.072
851	Stephen F. Austin State Univ	TX	0.42	870	0.80	0.12	0.492	-0.072
852	Delaware State University	DE	0.26	715	0.60	0.18	0.332	-0.072
853	Catawba College	NC	0.44	877	0.90	0.09	0.513	-0.073
854	University of Oklahoma	OK	0.45	910	0.80	0.16	0.524	-0.074
855	Southwestern College	KS	0.36	820	0.70	0.17	0.434	-0.074
856	Cedarville College	OH	0.54	995	0.90	0.03	0.614	-0.074
857	Union College	NE	0.41	880	0.70	0.17	0.485	-0.075
858	William Tyndale College	MI	0.13	670	0.10	0.69	0.205	-0.075
859	Shorter College	GA	0.42	875	0.80	0.15	0.495	-0.075
860	Sonoma State University	CA	0.39	910	0.40	0.26	0.465	-0.075
861	Central Methodist Col	MO	0.39	820	0.90	0.07	0.466	-0.076
862	Urbana Univiversity	OH	0.24	730	0.40	0.22	0.316	-0.076
863	University of Texas-El Paso	TX	0.24	800	0.00	0.32	0.317	-0.077
864	Cleveland State Univ	OH	0.30	857	0.10	0.34	0.377	-0.077
865	West Virginia Univiversity	WV	0.56	1040	0.80	0.06	0.637	-0.077
866	Roberts Wesleyan College	NY	0.47	935	0.80	0.10	0.547	-0.077
867	Georgia Institute of Technology	GA	0.69	1195	0.80	0.06	0.767	-0.077
868	University of Miami	FL	0.63	1110	0.90	0.10	0.708	-0.078
869	Converse College	SC	0.58	1050	0.90	0.09	0.658	-0.078
870	Univ of Mass. Boston	MA	0.39	874	0.70	0.43	0.468	-0.078
871	University of Nevada-Reno	NV	0.35	920	0.10	0.38	0.428	-0.078
872	University of Minnesota-Duluth	MN	0.44	900	0.90	0.40	0.518	-0.078
873	Chadron State College	NE	0.38	820	0.90	0.23	0.459	-0.079
874	Western Kentucky University	KY	0.38	850	0.70	0.19	0.459	-0.079

Rank	Institution	State	IGR 1995	SAT 1990	% OC 1995	%PT 1990	Predicted IGR	Difference
875	University of Dubuque	IA	0.34	790	0.80	0.25	0.419	-0.079
876	Dominican Col. of San Rafael	CA	0.42	882	0.80	0.17	0.500	-0.080
877	Univ. of Sioux Falls	SD	0.40	850	0.90	0.32	0.480	-0.080
878	Texas A&M U.- Galveston	TX	0.52	980	0.90	0.07	0.600	-0.080
879	Univ of Minnesota-Twin Cities	MN	0.49	1020	0.60	0.58	0.571	-0.081
880	Texas Southern University	TX	0.14	640	0.30	0.32	0.223	-0.083
881	Wright State Univ	OH	0.32	820	0.50	0.27	0.403	-0.083
882	Sterling College	KS	0.36	793	0.90	0.05	0.444	-0.084
883	Okl. Christian U. Sci & Arts	OK	0.38	820	0.90	0.11	0.464	-0.084
884	Univ of Missouri-Kansas City	MO	0.41	983	0.20	0.39	0.494	-0.084
885	Tarleton State University	TX	0.35	833	0.60	0.11	0.434	-0.084
886	Troy State University	AL	0.45	970	0.50	0.14	0.535	-0.085
887	Tabor College	KS	0.38	820	0.90	0.09	0.465	-0.085
888	Lamar University	TX	0.22	774	0.10	0.40	0.305	-0.085
889	Indiana University Southeast	IN	0.26	844	0.00	0.51	0.345	-0.085
890	Notre Dame College	NH	0.39	900	0.60	0.45	0.476	-0.086
891	Tennessee Wesleyan College	TN	0.28	760	0.60	0.25	0.367	-0.087
892	Dillard University	LA	0.41	920	0.50	0.04	0.497	-0.087
893	Florida Inst. of Tech.	FL	0.54	1015	0.90	0.12	0.627	-0.087
894	Clark Atlanta University	GA	0.55	1070	0.60	0.02	0.637	-0.087
895	N. Adams State College	MA	0.46	921	0.90	0.13	0.548	-0.088
896	East Texas State U.	TX	0.39	894	0.60	0.28	0.478	-0.088
897	San Jose State Univ.	CA	0.37	920	0.30	0.31	0.458	-0.088
898	Calif. State- San Bernardino	CA	0.41	1000	0.10	0.31	0.498	-0.088
899	Trevvaca Nazarene Univ.	TN	0.37	820	0.90	0.23	0.459	-0.089
900	Averett College	VA	0.46	938	0.80	0.13	0.549	-0.089
901	Univ. Tennessee-Chattanooga	TN	0.37	950	0.10	0.26	0.459	-0.089
902	New School for Social Research	NY	0.52	1150	0.00	0.35	0.609	-0.089
903	Long Island U. C.W. Post Col.	NY	0.36	856	0.60	0.20	0.450	-0.090
904	Henderson State Univ.	AR	0.29	790	0.50	0.22	0.380	-0.090
905	N. Carolina Wesleyan Col.	NC	0.34	800	0.90	0.50	0.430	-0.090
906	D'Youville College	NY	0.41	920	0.60	0.28	0.500	-0.090
907	University of Central Arkansas	AR	0.29	866	0.00	0.10	0.382	-0.092
908	San Diego State Univ	CA	0.36	911	0.30	0.27	0.452	-0.092
909	Indiana University South Bend	IN	0.28	880	0.00	0.57	0.373	-0.093
910	University of North Florida	FL	0.44	1067	0.00	0.50	0.533	-0.093
911	Adams State College	CO	0.33	820	0.60	0.12	0.423	-0.093
912	Ramapo College of New Jersey	NJ	0.40	920	0.60	0.42	0.494	-0.094
913	SUNY Col. Arts & Sci. Brockport	NY	0.46	948	0.80	0.20	0.554	-0.094
914	Christopher Newport Univ	VA	0.35	924	0.20	0.40	0.444	-0.094
915	Augsburg College	MN	0.50	1000	0.80	0.27	0.595	-0.095
916	William Penn College	IA	0.34	820	0.70	0.14	0.436	-0.096
917	Arizona State University	AZ	0.45	989	0.50	0.25	0.546	-0.096
918	Bartlesville Wesleyan Col	OK	0.36	820	0.90	0.29	0.456	-0.096
919	University of Kentucky	KY	0.47	945	0.90	0.17	0.566	-0.096
920	Winona State Univ	MN	0.42	900	0.80	0.14	0.516	-0.096
921	University of Idaho	ID	0.48	955	0.90	0.13	0.576	-0.096
922	McPherson College	KS	0.41	880	0.90	0.28	0.507	-0.097
923	University of Arizona	AZ	0.50	1030	0.60	0.17	0.597	-0.097
924	Calif. State-Northridge	CA	0.31	892	0.10	0.32	0.407	-0.097
925	Northwestern State U. of Louis	LA	0.28	790	0.50	0.27	0.378	-0.098
926	Hampshire College	MA	0.61	1105	0.90	0.00	0.708	-0.098
927	Texas Lutheran College	TX	0.44	950	0.70	0.29	0.538	-0.098
928	Florida Atlantic Univ	FL	0.48	1043	0.50	0.52	0.579	-0.099
929	CUNY-Queens College	NY	0.44	1070	0.00	0.39	0.540	-0.100
930	University of Florida	FL	0.63	1139	0.90	0.14	0.730	-0.100
931	Loyola Univ. of New Orleans	LA	0.50	1020	0.70	0.21	0.600	-0.100
932	University of Redlands	CA	0.58	1074	0.90	0.03	0.681	-0.101
933	University of South Alabama	AL	0.30	850	0.30	0.28	0.401	-0.101
934	Univ. of Colorado-Col. Springs	CO	0.38	1001	0.00	0.42	0.481	-0.101
935	Carnegie Mellon University	PA	0.70	1220	0.90	0.08	0.801	-0.101
936	Oral Roberts University	OK	0.44	910	0.90	0.04	0.542	-0.102
937	LeTourneau Univ	TX	0.49	990	0.80	0.07	0.595	-0.105
938	Salem College	NC	0.50	998	0.90	0.30	0.605	-0.105
939	Northeastern University	MA	0.42	943	0.70	0.45	0.525	-0.105
940	Coppin State College	MD	0.22	811	0.00	0.32	0.326	-0.106
941	Seattle Pacific University	WA	0.45	949	0.80	0.17	0.556	-0.106
942	Manhattanville College	NY	0.59	1100	0.90	0.17	0.696	-0.106
943	Jamestown College	ND	0.41	880	0.90	0.06	0.516	-0.106
944	Seattle University	WA	0.49	1000	0.80	0.22	0.597	-0.107
945	St. John's College	NM	0.68	1200	0.90	0.02	0.787	-0.107
946	Nicholls State Univ.	LA	0.21	730	0.40	0.20	0.317	-0.107
947	California State-Bakersfield	CA	0.31	889	0.20	0.33	0.418	-0.108

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Rank	Institution	State	IGR 1995	SAT 1990	% OC 1995	%PT 1990	Predicted IGR	Difference
948	University of Nebraska-Omaha	NE	0.22	820	0.00	0.44	0.328	-0.108
949	Temple University	PA	0.43	982	0.50	0.28	0.539	-0.109
950	Fresno Pacific College	CA	0.42	913	0.80	0.10	0.529	-0.109
951	Berry College	GA	0.55	1049	0.90	0.04	0.659	-0.109
952	Eastern Michigan Univ	MI	0.39	906	0.70	0.32	0.500	-0.110
953	Louisiana College	LA	0.42	966	0.50	0.17	0.530	-0.110
954	University of Montana	MT	0.35	850	0.70	0.15	0.460	-0.110
955	Concordia University	OR	0.34	841	0.70	0.20	0.451	-0.111
956	Hendrix College	AR	0.57	1089	0.80	0.01	0.681	-0.111
957	Armstrong State College	GA	0.26	857	0.10	0.47	0.371	-0.111
958	St. Andrew's Presb	NC	0.51	1004	0.90	0.04	0.621	-0.111
959	Culver-Stockton College	MO	0.40	880	0.90	0.15	0.512	-0.112
960	Univ. of North Texas	TX	0.38	924	0.50	0.22	0.492	-0.112
961	Columbia Union College	MD	0.35	874	0.70	0.54	0.463	-0.113
962	Colorado State University	CO	0.54	1050	0.90	0.18	0.654	-0.114
963	Univ. of Maryland-Eastern Shore	MD	0.24	721	0.70	0.10	0.354	-0.114
964	LaGrange College	GA	0.46	970	0.80	0.15	0.575	-0.115
965	Univ. of Wisconsin-Superior	WI	0.28	820	0.40	0.15	0.395	-0.115
966	Our Lady of the Lake	TX	0.30	860	0.40	0.44	0.416	-0.116
967	Georgia State Univ	GA	0.35	990	0.00	0.56	0.466	-0.116
968	Belmont Abbey College	NC	0.38	876	0.80	0.14	0.496	-0.116
969	Illinois Institute of Tech	IL	0.52	1050	0.80	0.27	0.636	-0.116
970	Univ. Mary Hardin-Baylor	TX	0.31	800	0.80	0.27	0.427	-0.117
971	Northeastern Illinois University	IL	0.16	760	0.00	0.46	0.277	-0.117
972	Kentucky Wesleyan Coll	KY	0.42	940	0.70	0.12	0.537	-0.117
973	U. of Maine-Presque Isle	ME	0.28	820	0.50	0.40	0.397	-0.117
974	Indiana State Univ	IN	0.35	860	0.70	0.17	0.468	-0.118
975	Georgtown College	KY	0.44	930	0.90	0.04	0.559	-0.119
976	Univ. of New Haven	CT	0.32	864	0.60	0.57	0.440	-0.120
977	St. Leo College	FL	0.30	788	0.90	0.48	0.421	-0.121
978	Univ. of Missouri-Rolla	MO	0.53	1109	0.50	0.15	0.651	-0.121
979	Warner Southern College	FL	0.32	813	0.80	0.19	0.441	-0.121
980	Midwestern State University	TX	0.27	841	0.30	0.33	0.391	-0.121
981	George Fox University	OR	0.45	976	0.70	0.02	0.572	-0.122
982	Limestone College	SC	0.31	835	0.70	0.51	0.432	-0.122
983	Virginia Intermont Coll	VA	0.33	839	0.70	0.13	0.452	-0.122
984	Alice Loyd College	KY	0.28	760	0.80	0.06	0.402	-0.122
985	Worcester Polytechnic Inst	MA	0.79	1350	0.90	0.03	0.912	-0.122
986	Cal Tech	CA	0.85	1420	0.90	0.00	0.973	-0.123
987	Univ. of South Florida	FL	0.47	1022	0.70	0.41	0.593	-0.123
988	William Woods University	MO	0.41	901	0.90	0.07	0.534	-0.124
989	Davis & Elkins College	WV	0.35	900	0.50	0.18	0.474	-0.124
990	Northland College	WI	0.45	965	0.80	0.06	0.574	-0.124
991	Georgia Southwestern College	GA	0.25	800	0.40	0.23	0.374	-0.124
992	NC-Asheville	NC	0.41	951	0.70	0.36	0.536	-0.126
993	University of Tulsa	OK	0.54	1109	0.60	0.11	0.666	-0.126
994	Gardner Webb Univ	NC	0.29	800	0.70	0.20	0.416	-0.126
995	Georgia College	GA	0.34	911	0.40	0.26	0.466	-0.126
996	Freed Hardeman Univ	TN	0.43	943	0.80	0.04	0.557	-0.127
997	University of South Dakota	SD	0.53	1070	0.80	0.18	0.657	-0.127
998	Univ. of Arkansas-Little Rock	AR	0.19	790	0.10	0.42	0.317	-0.127
999	Cal Poly-San Luis Obispo	CA	0.49	1020	0.80	0.12	0.618	-0.128
1000	Prairie View A&M University	TX	0.27	742	0.90	0.09	0.399	-0.129
1001	Agnes Scott	GA	0.55	1077	0.90	0.12	0.679	-0.129
1002	University of West Florida	FL	0.39	965	0.50	0.39	0.519	-0.129
1003	Chicago State University	IL	0.20	820	0.00	0.41	0.329	-0.129
1004	Chapman Univ	CA	0.39	920	0.70	0.11	0.521	-0.131
1005	Drexel University	PA	0.55	1118	0.70	0.25	0.681	-0.131
1006	Indiana Wesleyan University	IN	0.31	829	0.70	0.18	0.441	-0.131
1007	Univ. of Bridgeport	CT	0.38	920	0.70	0.32	0.512	-0.132
1008	Rensselaer Polytechnic Inst	NY	0.68	1230	0.90	0.01	0.813	-0.133
1009	University of Michigan-Flint	MI	0.35	1007	0.00	0.48	0.483	-0.133
1010	Mount Marty College	SD	0.35	880	0.80	0.48	0.485	-0.135
1011	University of Southern Indiana	IN	0.22	819	0.20	0.40	0.356	-0.136
1012	Georgia Southern Univ	GA	0.39	926	0.70	0.08	0.527	-0.137
1013	North Dakota State Univ	ND	0.36	880	0.80	0.18	0.498	-0.138
1014	Dickinson State Univ	ND	0.30	790	0.90	0.12	0.438	-0.138
1015	Virginia State University	VA	0.27	801	0.60	0.09	0.408	-0.138
1016	Portland State University	OR	0.25	877	0.10	0.45	0.389	-0.139
1017	Bethel College	TN	0.23	730	0.80	0.23	0.370	-0.140
1018	State Univ. West Georgia	GA	0.28	820	0.60	0.19	0.420	-0.140
1019	Methodist College	NC	0.33	910	0.40	0.13	0.471	-0.141
1020	Black Hills State Col	SD	0.24	790	0.50	0.17	0.382	-0.142

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1021	Iowa Wesleyan College	IA	0.27	790	0.80	0.39	0.413	-0.143
1022	Adrian College	MI	0.47	996	0.90	0.08	0.613	-0.143
1023	Northeastern State Univ	OK	0.25	790	0.60	0.23	0.393	-0.143
1024	Texas Tech	TX	0.38	908	0.80	0.12	0.524	-0.144
1025	Utica Col. of Syracuse	NY	0.48	1040	0.80	0.36	0.624	-0.144
1026	Warren Wilson College	NC	0.45	970	0.90	0.01	0.594	-0.144
1027	SUNY-Old Westbury	NY	0.24	800	0.50	0.31	0.384	-0.144
1028	Univ. of Illinois-Chicago	IL	0.38	1007	0.20	0.16	0.524	-0.144
1029	Graceland College	IA	0.41	956	0.90	0.64	0.555	-0.145
1030	Augusta State University	GA	0.21	850	0.00	0.40	0.355	-0.145
1031	New York Inst. of Tech	NY	0.27	900	0.10	0.29	0.415	-0.145
1032	Nova Southeastern Univ	FL	0.28	900	0.20	0.36	0.426	-0.146
1033	Fairleigh Dickinson Univ	NJ	0.35	923	0.60	0.42	0.496	-0.146
1034	Indiana University Kokomo	IN	0.21	866	0.00	0.67	0.357	-0.147
1035	Valdosta State University	GA	0.26	805	0.60	0.20	0.407	-0.147
1036	Univ. of Alaska-Fairbanks	AK	0.27	820	0.70	0.53	0.418	-0.148
1037	Holy Names College	CA	0.34	900	0.70	0.46	0.489	-0.149
1038	Hardin-Simmons University	TX	0.34	889	0.70	0.23	0.490	-0.150
1039	Boise State University	ID	0.22	869	0.00	0.40	0.371	-0.151
1040	University of Dallas	TX	0.56	1130	0.80	0.08	0.712	-0.152
1041	Chaminade Univ. of Honolulu	HI	0.23	845	0.30	0.58	0.383	-0.153
1042	Kendall College	IL	0.29	875	0.40	0.08	0.444	-0.154
1043	Western Oregon State College	OR	0.31	852	0.70	0.07	0.466	-0.156
1044	Phillips University	OK	0.32	910	0.40	0.03	0.476	-0.156
1045	Carroll College	MT	0.42	960	0.90	0.24	0.576	-0.156
1046	Pacific Christian College	CA	0.36	900	0.80	0.15	0.516	-0.156
1047	Kansas Newman College	KS	0.33	945	0.40	0.45	0.487	-0.157
1048	Eastern Kentucky University	KY	0.30	820	0.90	0.20	0.460	-0.160
1049	Palm Beach Atlantic	FL	0.31	844	0.80	0.12	0.470	-0.160
1050	Bethany College	KS	0.38	910	0.90	0.05	0.542	-0.162
1051	St. John's Coll.	MD	0.65	1230	0.90	0.01	0.813	-0.163
1052	Virginia Wesleyn	VA	0.38	950	0.70	0.19	0.543	-0.163
1053	Wesleyan College	GA	0.45	1002	0.90	0.19	0.613	-0.163
1054	Colorado School of Mines	CO	0.58	1190	0.70	0.20	0.744	-0.164
1055	Maryville College	TN	0.38	940	0.80	0.23	0.546	-0.166
1056	Northern Arizona Univ	AZ	0.38	920	0.90	0.15	0.546	-0.166
1057	Piedmont College	GA	0.29	910	0.30	0.16	0.456	-0.166
1058	University of New Mexico	NM	0.37	979	0.50	0.26	0.537	-0.167
1059	Troy State Univ.-Montgomery	AL	0.17	850	0.00	0.79	0.338	-0.168
1060	Montana Tech	MT	0.40	1019	0.50	0.28	0.570	-0.170
1061	Reed College	OR	0.67	1264	0.90	0.04	0.840	-0.170
1062	Greensboro College	NC	0.29	825	0.90	0.27	0.461	-0.171
1063	Indiana U.-Purdue U.-Indianapolis	IN	0.24	910	0.10	0.58	0.411	-0.171
1064	University of Texas-San Antonio	TX	0.23	904	0.00	0.38	0.401	-0.171
1065	Illinois College	IL	0.50	1080	0.80	0.04	0.672	-0.172
1066	Jacksonville Univ	FL	0.44	1030	0.70	0.14	0.612	-0.172
1067	Texas Wesleyan Univ	TX	0.30	920	0.40	0.27	0.473	-0.173
1068	University of Texas-Arlington	TX	0.28	918	0.30	0.37	0.454	-0.174
1069	Oglethorpe College	GA	0.53	1116	0.90	0.29	0.705	-0.175
1070	McMurry University	TX	0.30	850	0.90	0.38	0.477	-0.177
1071	University of Tampa	FL	0.37	958	0.70	0.17	0.550	-0.180
1072	Montana State Univ	MT	0.41	970	0.90	0.08	0.591	-0.181
1073	Bennington College	VT	0.49	1062	0.90	0.00	0.672	-0.182
1074	Covenant College	GA	0.42	983	0.90	0.03	0.604	-0.184
1075	Long Island U. Southhampton Col	NY	0.40	965	0.90	0.10	0.586	-0.186
1076	Univ. of Southern Maine	ME	0.31	945	0.50	0.54	0.496	-0.186
1077	Ferrum College	VA	0.26	800	0.90	0.05	0.450	-0.190
1078	U. of Maine-Machias	ME	0.25	875	0.50	0.43	0.442	-0.192
1079	Southwest Texas State Univ	TX	0.31	890	0.80	0.19	0.506	-0.196
1080	Mercer University	GA	0.41	997	0.90	0.24	0.607	-0.197
1081	Pacific University	OR	0.43	1010	0.90	0.02	0.627	-0.197
1082	St. Martin's College	WA	0.29	868	0.90	0.45	0.489	-0.199
1083	Daemen College	NY	0.30	920	0.60	0.24	0.502	-0.202
1084	Oklahoma City University	OK	0.34	954	0.70	0.28	0.542	-0.202
1085	Columbus State University	GA	0.26	900	0.50	0.37	0.466	-0.206
1086	Northwest Missouri State Univ	MO	0.41	1000	0.90	0.08	0.616	-0.206
1087	Unity College	ME	0.36	940	0.90	0.04	0.568	-0.208
1088	Fisk University	TN	0.30	869	0.90	0.01	0.509	-0.209
1089	Centenary College	NJ	0.24	860	0.70	0.54	0.452	-0.212
1090	Minot State University	ND	0.34	990	0.50	0.10	0.553	-0.213
1091	Kennesaw State Univ	GA	0.24	979	0.00	0.53	0.458	-0.218
1092	SUNY Purchase	NY	0.37	985	0.90	0.44	0.588	-0.218
1093	Angelo State Univ	TX	0.31	920	0.80	0.24	0.529	-0.219

Rank	Institution	State	IGR 1995	SAT 1990	% OC 1995	%PT 1990	Predicted IGR	Difference
1094	Macalester College	MN	0.70	1360	0.90	0.05	0.920	-0.220
1095	Southern Oregon Univ	OR	0.25	900	0.50	0.10	0.478	-0.228
1096	Long Island Univ. Brooklyn	NY	0.26	965	0.20	0.16	0.489	-0.229
1097	Alaska Pacific University	AK	0.16	900	0.10	0.70	0.397	-0.237
1098	Mississippi Valley State	MS	0.39	1025	0.90	0.10	0.636	-0.246
1099	Missouri Valley College	MO	0.21	810	0.90	0.08	0.457	-0.247
1100	Antioch College	OH	0.43	1070	0.90	0.03	0.677	-0.247
1101	Marlboro College	VT	0.41	1063	0.90	0.04	0.671	-0.261
1102	Buffalo State College	NY	0.40	1104	0.70	0.23	0.670	-0.270
1103	University of Houston	TX	0.27	995	0.50	0.36	0.546	-0.276
1104	Colorado Christian University	CO	0.22	940	0.70	0.06	0.540	-0.320
1105	Tougaloo College	MS	0.30	1096	0.70	0.09	0.670	-0.370
1106	Simons Rock of Bard College	MA	0.21	1151	0.90	0.03	0.745	-0.535

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Postsecondary Education
OPPORTUNITY

The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 59 **Iowa City, Iowa** **May 1997**

Earnings for Individuals by Educational Attainment 1975 to 1994

Earnings from one's labors have been, are, and are increasingly determined by educational attainment. Where our ability to earn a living from our labors is constrained by time, some workers earn considerably more than do other workers in the same period of time. What differentiates earnings is not time but instead is educational attainment.

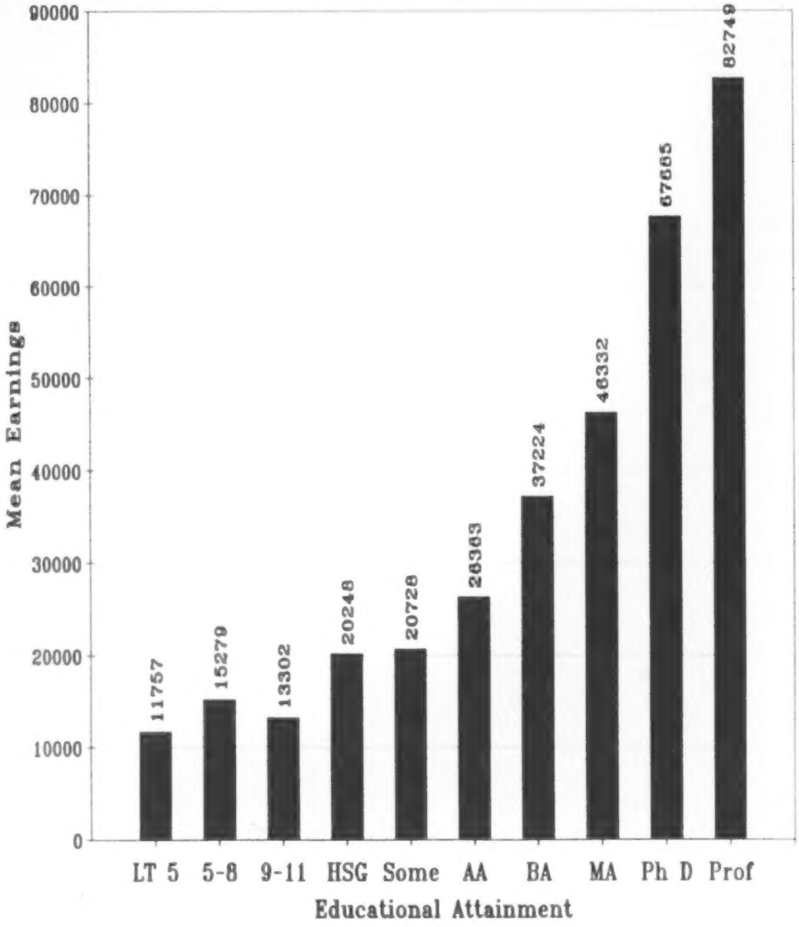
In this analysis we examine earnings for persons by their educational attainment. This examination is by gender and by race/ethnicity. Beyond the obvious relationship shown in the chart on this page, we are particularly interested in *changes* in the relationship between education and earnings that have occurred over the last two decades.

Findings from this analysis are clear and compelling.

- Between 1975 and 1994 the mean earnings of males with earnings who have less than a bachelor's degree have declined in constant dollars. The mean earnings for those with a bachelor's degree or more have increased in real terms.
- The earnings of females 18 years and over with earnings have increased in real terms at all levels of educational attainment except for those who are not high school graduates. The largest real gains in earnings are among females with the most higher education.

Generally, these findings apply to whites, blacks and Hispanics of both genders.

Mean Earnings by Educational Attainment
for Persons 18 and Over with Earnings
1994

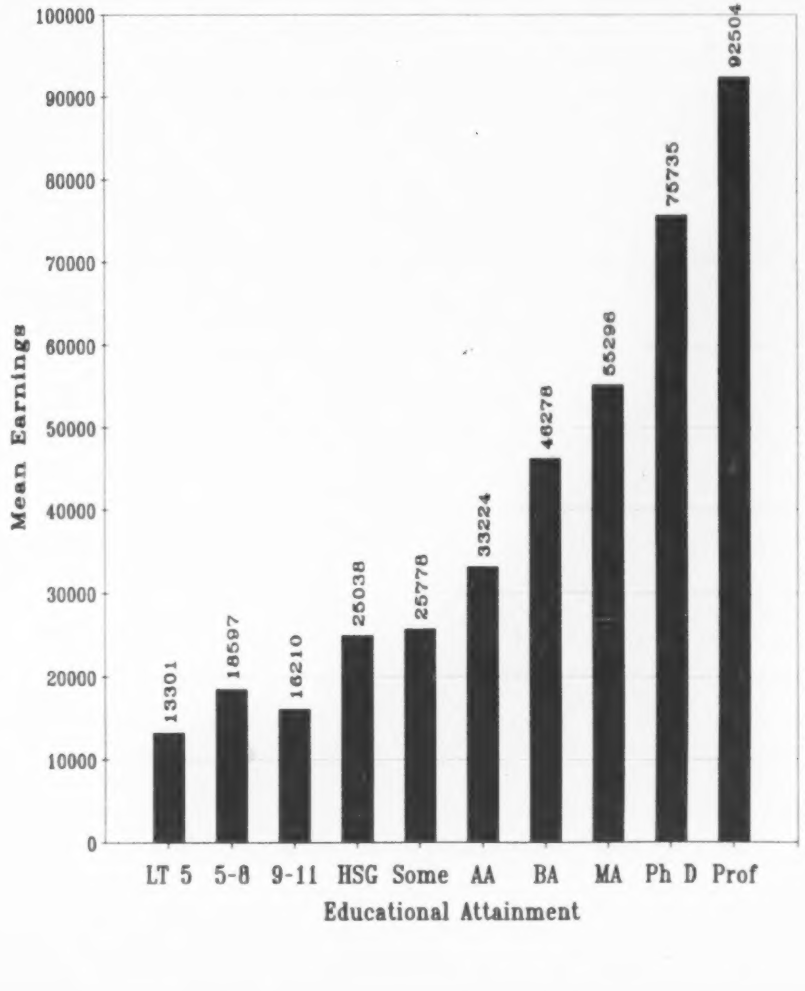


The implications of these findings are profound for both individuals and for society. To the extent one measures living standards by income, these data indicate that the standard of living at which one may expect to live adult life is under the control of decisions made by people and society about who gets how much education.

Individuals must make their own postsecondary enrollment decisions. These include preparation, access, choice, commitment and dedication, persistence and completion. Many young people come from families, schools and communities that prepare them well for postsecondary education and the decisions needed to be successful.

Other young people come from families, schools and communities where guidance, preparation and support fall far short of the resources needed to prepare them for the opportunities and challenges following high school. These young people need help from the outside--guidance, tutoring, mentoring and other interventions--that supplement the resources available to them. This is where public policy and programs become important. Student financial aid and outreach programs like Upward Bound and Talent Search at the federal level, and many state programs help re-level the playing

Mean Earnings by Educational Attainment
for Males 18 and Over with Earnings
1994



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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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field. The social investment becomes necessary when individuals, as a result of their circumstances, are unlikely to succeed without outside help.

Data and Analysis

The earnings data used in this analysis have been reported by the Census Bureau from data collected in the Current Population Survey. Data used here were taken from the Census Bureau's most recent report on educational attainment:

Day, J., and Curry, A. *Educational Attainment in the United States: March 1995.* U.S. Bureau of the Census, Current Population Reports, P20-489. U.S. Government Printing Office, Washington, DC, 1996.

This report is no longer published in paper form. It must be downloaded from the Census Bureau's website at:

http://www.census.gov/

The file is in .pdf format, and requires Adobe Acrobat software, available free through the Census Bureau's website, to be able to see and print the file.

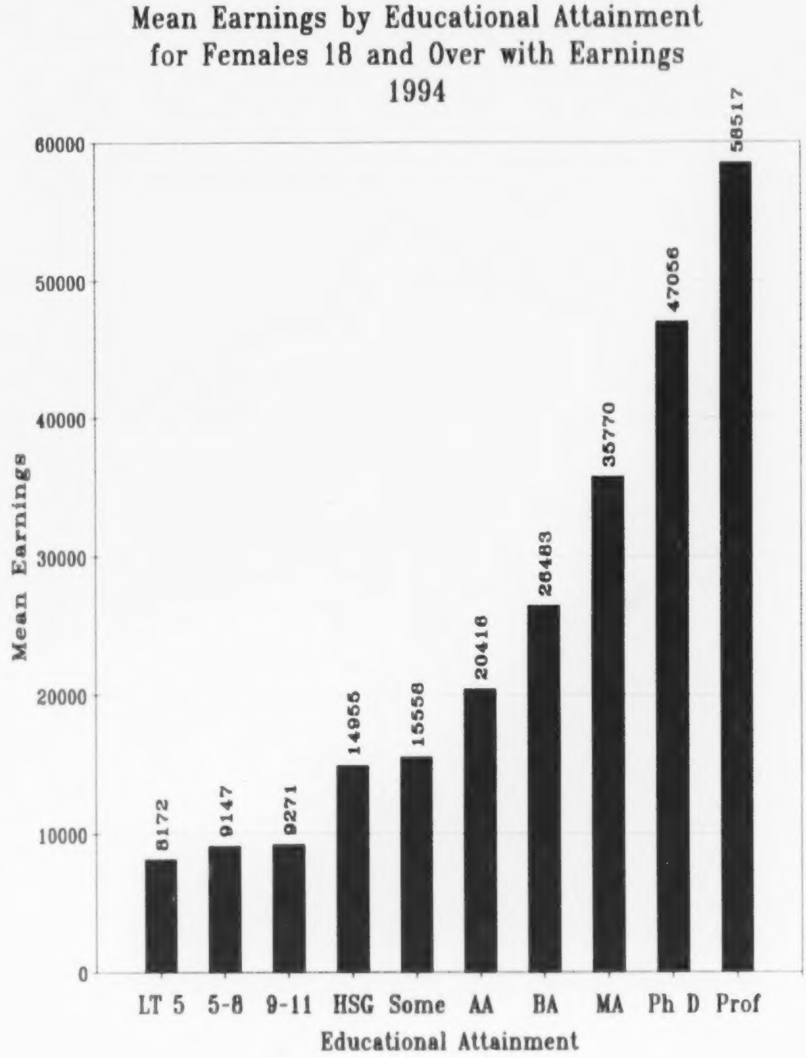
The current dollar values published by the Census Bureau have been converted to constant dollars with the Bureau of Labor Statistic's Consumer Price Index available at the BLS website:

http://stats.bls.gov/cpihome.htm/

Downloading CPI data may be done directly through your browser and does not require Adobe Acrobat software.

Earnings by Educational Attainment

In 1994, persons with high school diplomas earned 52 percent more than did high school dropouts. Persons with associate degrees from college earned 30 percent more than did high school graduates. Persons with bachelor's degrees earned 41 percent more than did persons with associate degrees. Advanced degrees earned large premiums beyond those with bachelor's degrees.



> *The relationship between educational attainment and earnings is unequivocally clear: those with more education earn more, and those with less education earn less. To the extent earnings measure standard of living, education determines living standards.*

In past issues of opportunity we have described these relationships for families and states. But families and states are made up of individuals, with more or less education and earning more or less income as a result of their educations.

The relationship between education and earnings applies equally well to

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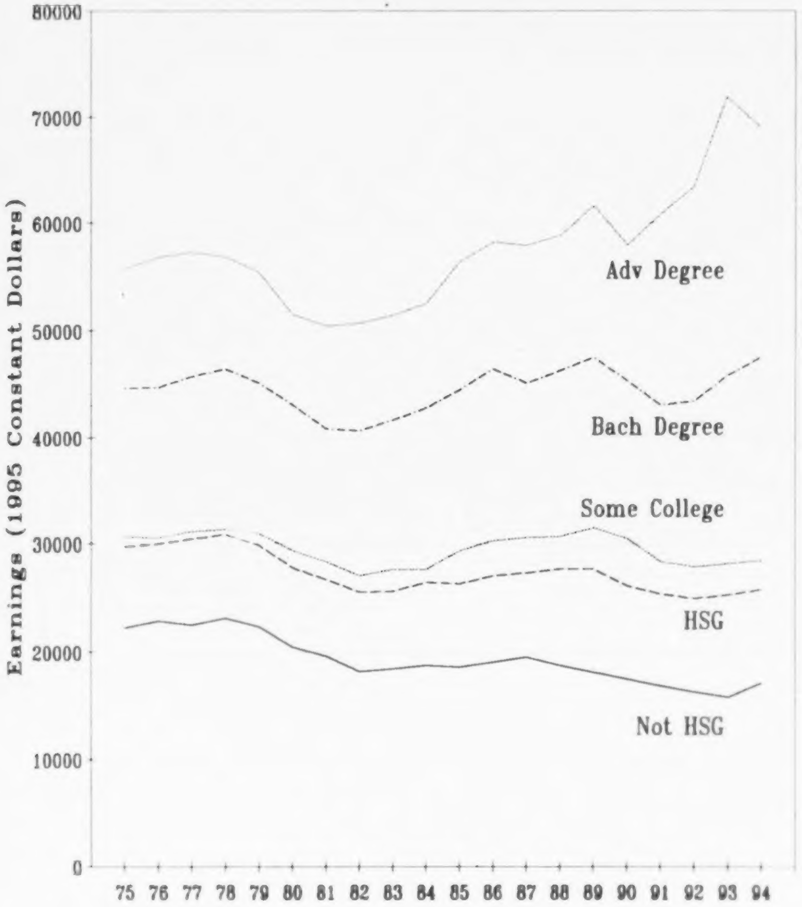
Mean Earnings of Male Workers 18 and Over
by Educational Attainment
1975 to 1994



males and females. More education means higher earnings and less education means lower earnings. The differences between the earnings of males and females at the same levels of educational attainment also tend to narrow with educational attainment. Female earnings as a percent of male earnings at each level of educational attainment in 1994 were:

Less than 5th	61.4%
5th to 8th	49.2
9th to 11th	57.2
High school graduate	59.7
Some college	60.4
Associate degree	61.4
Bachelor's degree	57.2
Master's degree	64.7
Doctorate degree	62.1
Professional	63.3

Changes in Earnings over Time

As dramatic as the relationship between education and earnings was in 1994, here we are more interested in changes in this relationship over time.

Our interpretation of the value of human labor at different levels of educational attainment is strictly economic. Better paid workers earn more because they are worth more to their employers, both due to their increased productivity and because of a shortage in supply relative to demand. Poorly paid workers earn less because they are worth less to their employers, both because they are not as productive and because of an excess in supply relative to demand for their labor.

Over time demand/supply imbalances for workers with different levels of educational attainment shift. In previous analyses of family income here in OPPORTUNITY, we have noted that in the early 1970s the post World War II relationships between education and income changed course. From the end or World War II up to about 1973, family incomes across all levels of educational attainment rose. But after 1973 through the present, income has stopped growing. Among families, median family income is now slightly below what it was in 1973. Instead of growth, family income has been redistributed, according to educational attainment of the head of the household.

Therefore, here we examine changes in the incomes of individuals over the last twenty years according to their educational attainment. The results for individuals are similar to those reported previously for families.

The chart on this page shows average annual earnings for males 18 and over who had earnings between 1975 and 1994 in constant dollars. In 1994, earnings were $16,633 for males who were not high school graduates, $25,038 for high school graduates, $27,636 for those with 1 to 3 years of college, $46,278 for bachelor's degree holders, and $67,032 for males with advanced degrees (MA, PhD, professional).

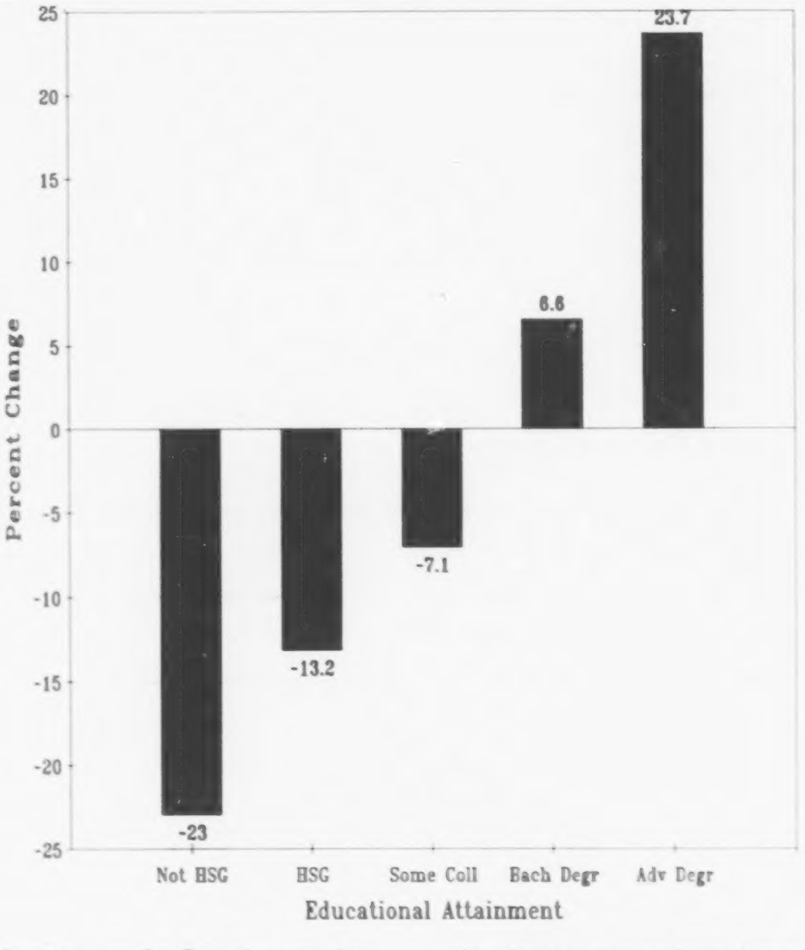
While earnings fluctuated with the business cycle--dipping in the economic recessions of the early 1980s and early 1990s--the more important trend is the divergence in these lines. For example, in 1975 males with bachelors degrees earned 50 percent more than males with high school diplomas only. By 1985 the bachelor's degree holders earned 69 percent more, and by 1994 they earned 85 percent more.

The chart on this page shows the change in constant dollar earnings of males at different levels of educational attainment between 1975 and 1994. At one extreme--males who were not high school graduates--incomes were low in 1975, and dropped 23 percent further by 1994. At the other extreme--males with advanced collegiate degrees--incomes were high in 1975 and were 23.7 percent higher by 1994.

It is this redistribution of income according to educational attainment that is the most striking finding from this analysis. From the economic perspective of demand and supply, the labor market is oversupplied with males at the lowest levels of educational attainment, which is why their real earnings have declined. And the labor market is undersupplied with males at the highest levels of educational attainment, which is why their real earnings have increased.

A somewhat similar picture emerges from the earnings data for females. Once again, earnings are linked to educational attainment. In 1994 average earnings of female workers age 18 years and over was $9189 for those who were not high school graduates, $14,955 for high school graduates, $16,928 for those with some college, $26,483 for those with a bachelor's degree and $39,905 for those with advanced collegiate degrees. While these are well below earnings for males at the same levels of educational attainment, earnings increase with educational attainment.

Change in Mean Earnings of Male Workers 18 and Over
by Educational Attaiment
1975 to 1994



Moreover, as the first chart on the following page shows, over the years between 1975 and 1994 earnings have diverged for females at different levels of educational attainment. In 1975 a female with a bachelor's degree earned 45 percent more than did a female with a high school diploma. By 1985 the bachelor's degree holder earned 59 percent more, and by 1994 the bachelor's degree paid 77 percent more.

The second chart on the following page shows the changes in real earnings of female workers at different educational attainment levels between 1975 and 1994. The pattern differs from males only insofar as each bar has been shifted upward. Earnings for females have also been redistributed up the educational attainment scale. Real earnings (adjusted for inflation) among females who are not high school graduates declined by 3 percent between 1975 and 1994, but rose by 47.5 percent for females with advanced degrees. (And although not the focus of this analysis, earnings differentials between males and females at each level of educational attainment closed somewhat during this period.)

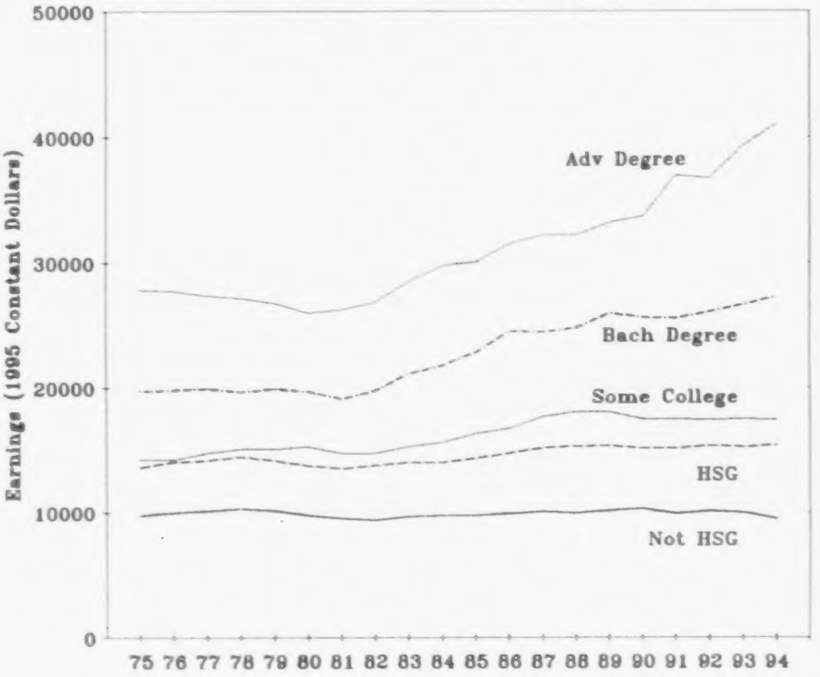
Applying the same demand/supply interpretation to these earnings data, the labor market appears to be slightly oversupplied with females with the lowest levels of educational attainment, and increasingly undersupplied with females at progressively greater levels of educational attainment.

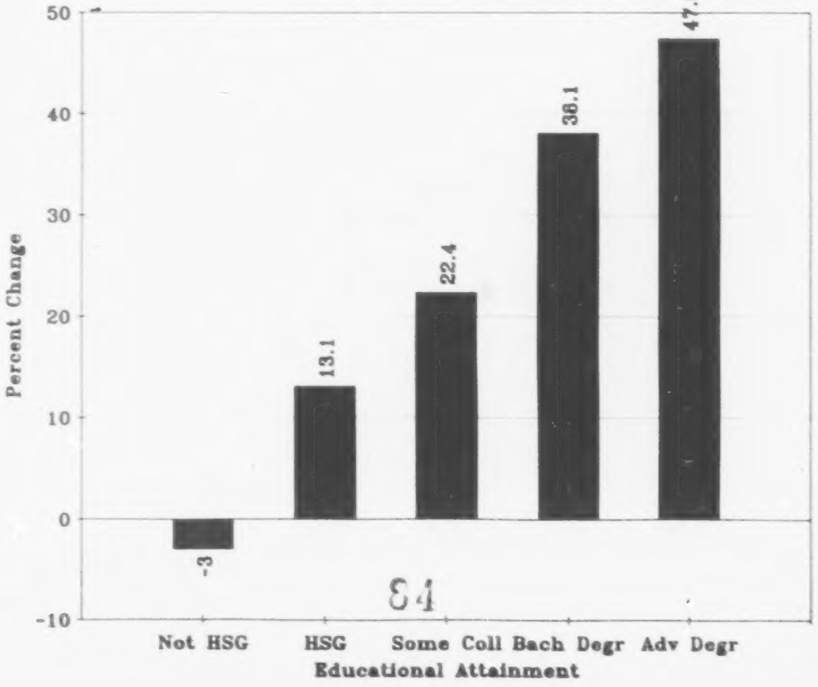
Race/Ethnicity

No one is exempted from the larger economic forces of changing technology and global competition that are redistributing earnings. While we began with the most aggregated data and moved through its interpretation by gender, we now illustrate it s application to the major racial/ethnic categories of white, black and Hispanic.

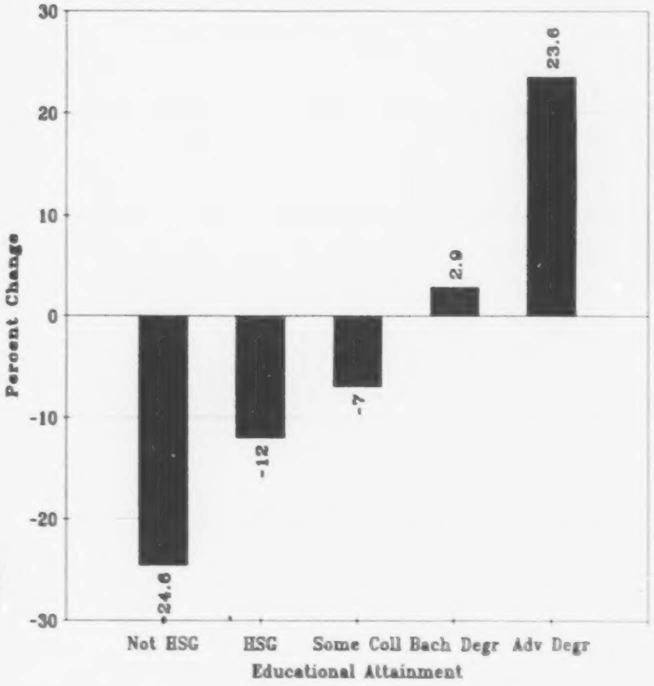
Whites. Whites constitute 84.8 percent of the population of workers 18 years and over (down from 88.8 percent in 1975). As a racial category this also includes most Hispanics (who have an ethnic, not racial, identity in Census Bureau data collection). The non-Hispanic white population constitutes about 75.9 percent of workers 18 years and over in 1994.

The top two charts on page 7 show the changes in mean real earnings of male and female white adult workers at different levels of educational attainment between 1975 and 1994. For white males the changes in real earnings ranged from a decline of 24.6 percent for those without who were not high school graduates, to an increase of 23.6 percent for those with advanced college degrees. For white female workers, the changes ranged from a decline in real earnings for those who were not high school graduates to an increase of 48.6 percent among those with advanced degrees.

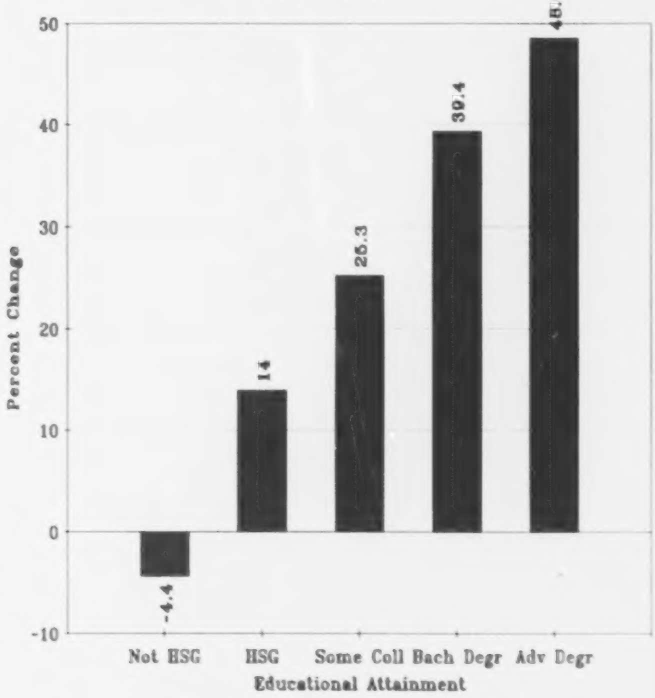

Mean Earnings of Female Workers 18 and Over
by Educational Attainment
1975 to 1994


Change in Mean Earnings of Female Workers 18 and Over
by Educational Attainment
1975 to 1994

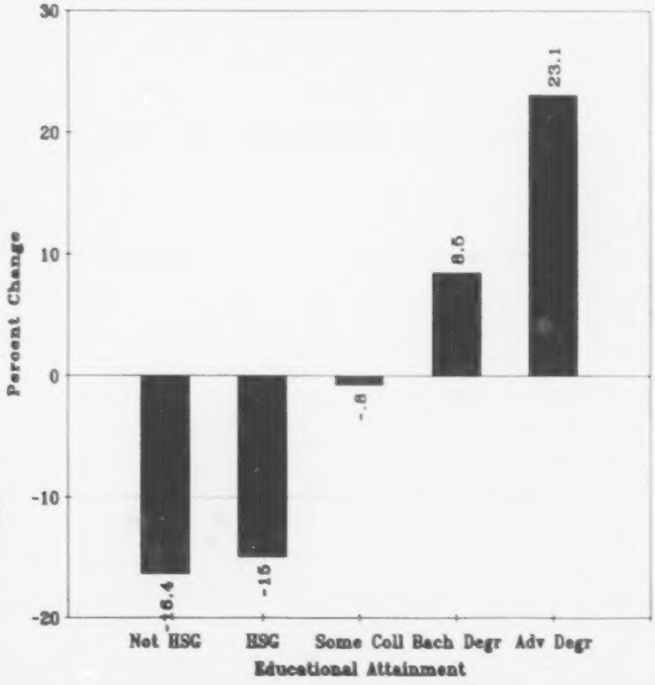
Change in Mean Earnings of White Male Workers
18 Years and Over by Educational Attaiment
1975 to 1994



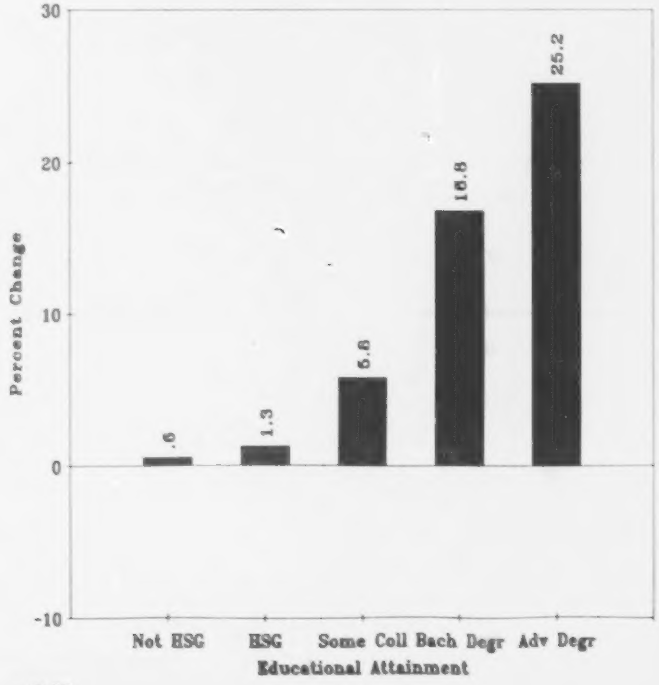
Change in Mean Earnings of White Female Workers
18 Years and Over by Educational Attaiment
1975 to 1994



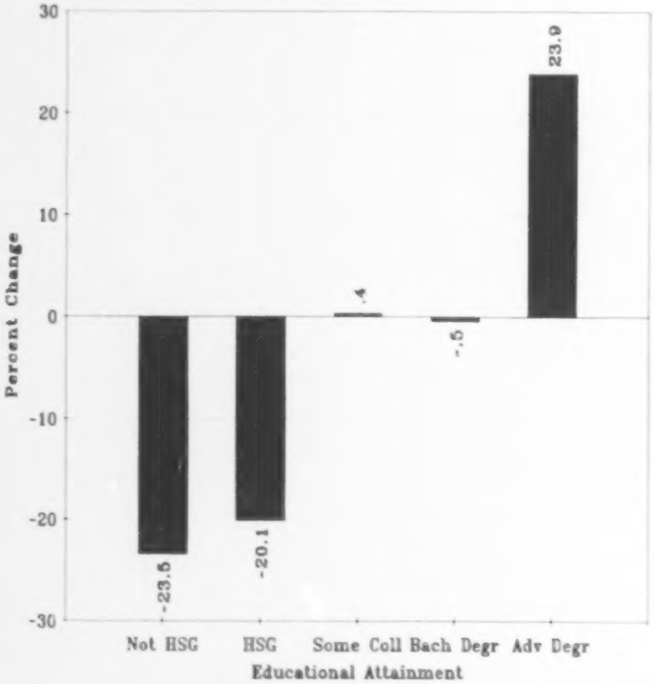
Change in Mean Earnings of Black Male Workers
18 Years and Over by Educational Attaiment
1975-77 to 1992-94



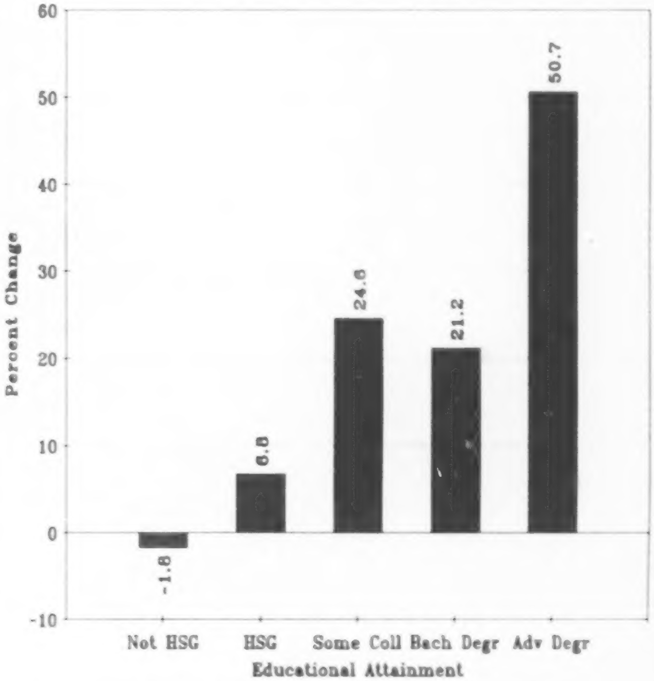
Change in Mean Earnings of Black Female Workers
18 Years and Over by Educational Attaiment
1975-77 to 1992-94



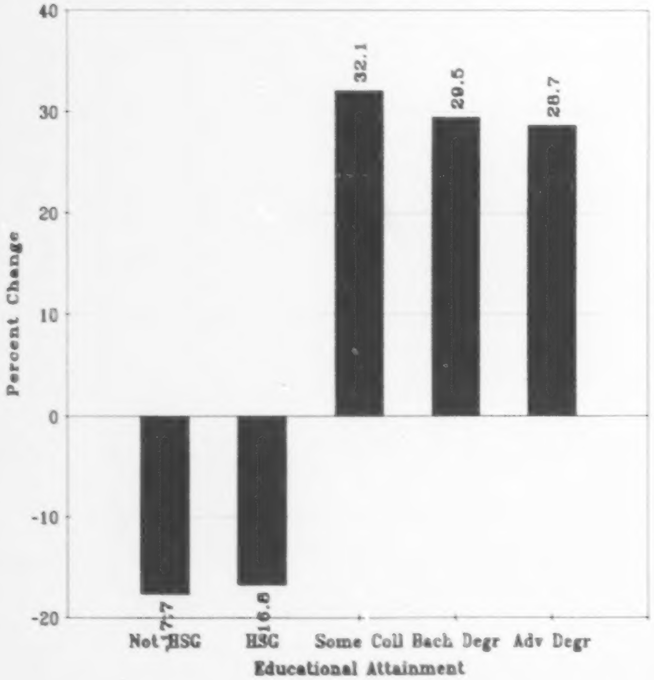
Change in Mean Earnings of Hispanic Male Workers
18 Years and Over by Educational Attaiment
1975-77 to 1992-94



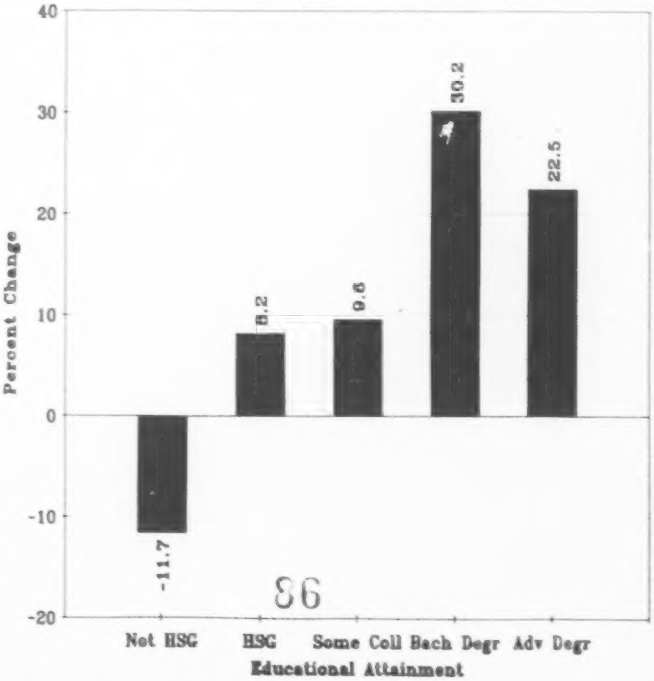
Change in Mean Earnings of Hispanic Female Workers
18 Years and Over by Educational Attaiment
1975-77 to 1992-94



Change in Mean Earnings of Other Race Male Workers
18 Years and Over by Educational Attaiment
1975-77 to 1992-94



Change in Mean Earnings of Other Race Female Workers
18 Years and Over by Educational Attaiment
1975-77 to 1992-94



Blacks. The two charts at the bottom of page 7 show the changes in earnings for adult black workers between 1975-77 and 1992-94. Here we have averaged three years of data at each end of the time span to eliminate statistical spikes in the data.

The results are quite similar to those for whites. Real earnings for black males with a high school education or less have declined, while black males with a bachelor's or advanced degree from college have seen real gains in average earnings. The pattern for females is similar to that for white females, with the largest real earnings gain occurring at the highest levels of educational attainment.

Hispanics. The two charts at the top of page 8 show changes in real earnings for adult Hispanic males and females between 1975-77 and 1992-94. Here again we have averaged data at the ends of the time span to eliminate statistical spiking.

In general the patterns for Hispanic males appear similar to those for white and black males. The largest decreases in real earnings occurred among males with high school educations or less, and the largest gain occurred among males with advanced degrees. The only anomaly is that real earnings for Hispanic males with bachelor's degrees remained essentially unchanged over this 20 year period.

Other race. We derived earnings changes data on "other race" from the published Census data by subtracting white and black from the totals. Other race refers mainly to Asians, although Native Americans are included here too.

The most important finding here is that those with high school educations or less have fared worst, and those with at least some college have seen real earnings gains between 1975 and 1994.

Summary of Findings

Our analysis belabors the point that postsecondary education is vital to determining the earnings, and hence living standards, that Americans live their adult lives at. For every demographic classification--total, male, female, white, black, Hispanic, other race--less education means lower average earnings, and more education equals higher average earnings. The link between educational attainment and earnings is perfectly clear.

Moreover, during the two decades between 1975 and 1994, the relationship between educational attainment and income has strengthened. Real earnings--corrected for the eroding effects of inflation--have declined for those with least formal education, and increased for those with the most formal education. This may be interpreted as a redistribution of living standards, from the least well educated to the best educated.

For males real earnings for those who have a high school education or less have declined--sharply--for whites, blacks, Hispanics and other race. Declines have been greatest for adult males who are not high school graduates. Males with only a high school diploma have fared only slightly better, experiencing substantial real declines in earnings over the last two decades.

For males with bachelor's degrees or more from college, there have been substantial real gains in earnings. (The only exception appears to be Hispanic males.) Generally the greatest gains have been among those with advanced degrees.

The picture differs for females only insofar as women's historically low wages have generally shifted upward between 1975 and 1994. Here again, women with least formal education generally lost real earnings, while women with the greatest amount of formal education saw the largest real earnings gains. These findings too apply to women in any racial/ethnic category--white, black, Hispanic or other race.

The linkage between educational attainment applies to all levels of social aggregation. The link has been demonstrated at the level of the family, the state and the nation.

Interpretation of Findings

Clearly there are broad forces reflected in these data. The relationship between education and earnings is so pervasive that some underlying principles are determining the relationship.

One of these perspectives is economic: people earn more because they produce more, and hence can be paid more by their employers. Education enhances skills and understanding that make workers produce more. When productivity increases, employers can afford to pay their employees better.

Over the period of the last two decades, another economic perspective is applicable: the relationship between demand and supply for workers at different levels of educational attainment. By this measure the labor market is oversupplied with workers having a high school education or less, and undersupplied with workers with postsecondary educations.

These labor market signals indicate that a high school education or less is no longer sufficient to earn a living at a decent standard. The economy driven by technological change and global competition requires greater levels of education and training to perform at optimal levels than it is currently receiving.

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Are We Moving Toward Two Classes of Opportunity?

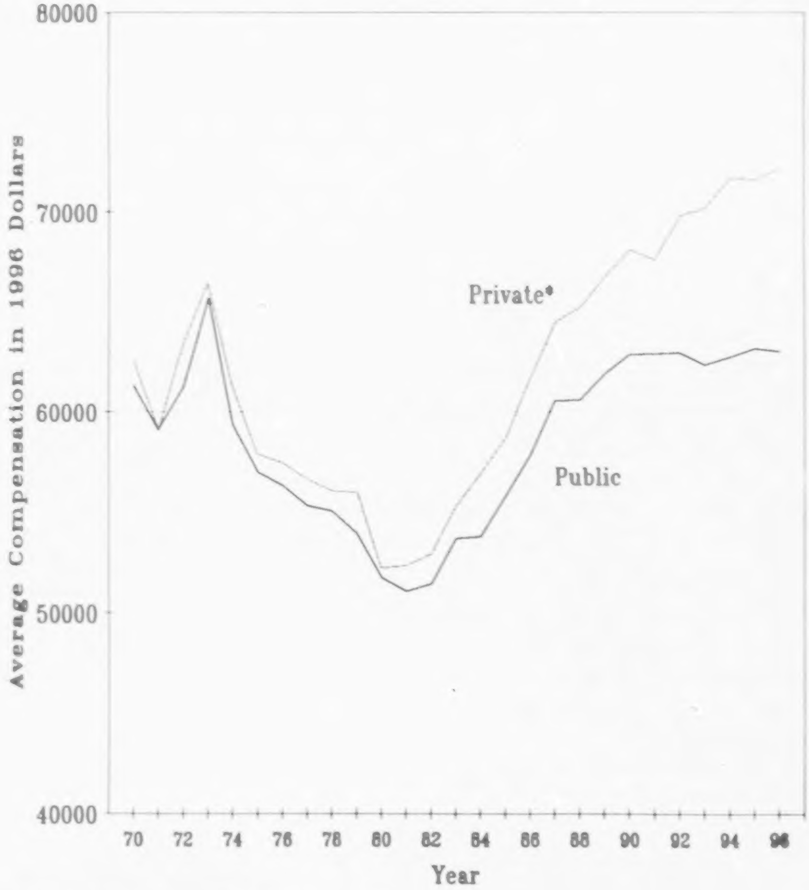
Editor's note: The following analysis was prepared by guest analyst, David J. Berg, retired Director, Office of Planning and Analysis, University of Minnesota. In this analysis Berg examines the growing differential between the compensation provided public and private higher education faculty. We believe this issue represents an important qualitative dimension of higher educational opportunity that is being ignored in state policy making. In the fall of 1994 two-thirds of all students enrolled in 4-year higher education were in public institutions. Moreover, the relative deterioration in public university faculty compensation since 1980 corresponds very closely to the period of state and federal funding cutback that has so adversely affected the distribution of higher educational opportunity for students from different family income levels.

Historically, faculty compensation (cash salary plus cash equivalent fringe benefits) has been quite similar at independent and public 4-year colleges and universities. The American Association of University Professors (AAUP) reports this data each year in *Academe*, annual "Economic Status of the Profession" reports. Although compensation levels at independent institutions have been higher at least since academic year (AY) 1970, until AY1984 the differential averaged about 2 percent and never exceeded 3.8 percent or about $2300 in 1996 constant dollars.

However, starting in AY1980, when the differential was a negligible $398 in 1996 constant dollars, the gap has widened quite steadily. By AY1996 it had increased to 14.4 percent, representing a difference of $9050. The earlier, fairly consistent, percentage differential had, by 1995, increased more than seven times in 15 years.

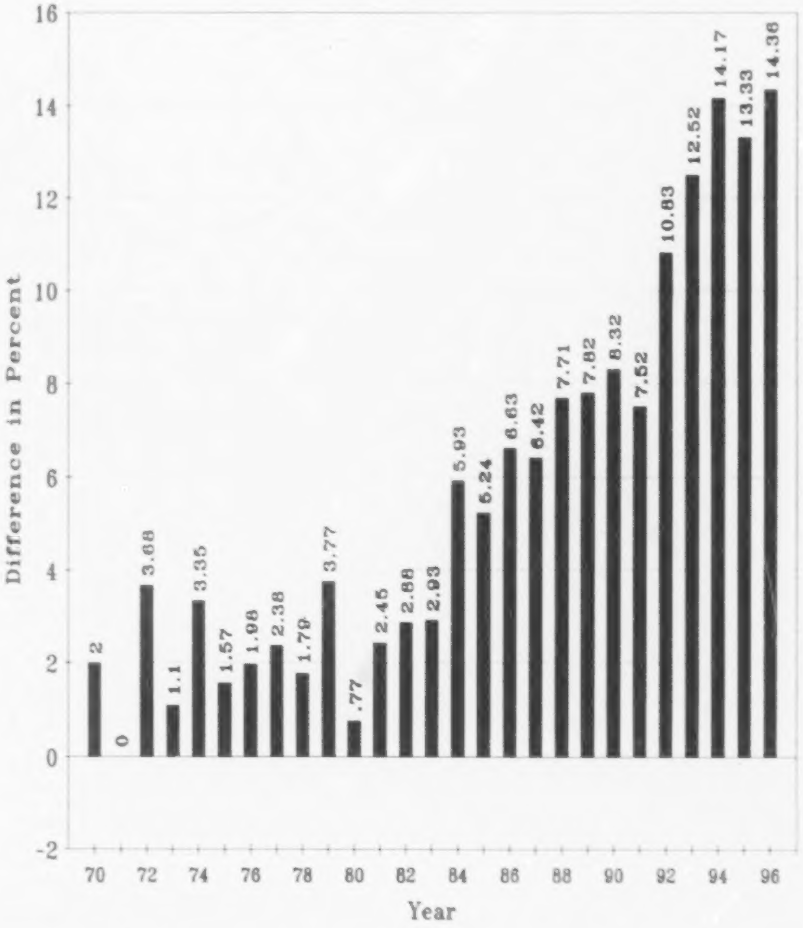
Over the entire 25 year period from AY1970 to AY1996, average faculty compensation in public institutions first declined and then increased, finishing with a relatively modest increase of $1700 from $61,320 in AY1970 to $63,020 in AY1996, measured in constant 1996 dollars. Although the shape of the curve for

Average Faculty Compensation of Full-Time, Nine Month Teaching Faculty in 4-Year Colleges and Universities*
1970 to 1996



* Excludes church-related institutions.

Percentage Difference in Faculty Compensation
Between Private and Public Institutions
1970 to 1996



independent institutions was similar, the increase was $9524, from $62,546 to $72,070.

Exploring the possible reasons for and consequences of this apparent change in historic relationships may be useful in understanding some underlying changes in the structure of American higher education. On the assumption that higher compensation levels will eventually attract the best faculty, continued large and increasing compensation disparity between public and independent institutions suggests a trend toward a two-level higher education system in which, eventually, one level is priced much higher than the other and is indisputably superior in quality.

The persistent increase in the compensation advantage of independent institutions should at least raise the question of whether sociopolitical trends and market forces are combining to produce two distinct higher education systems, far more differentiated in terms of quality and accessibility than has been the case in the recent past.

Faculty Salaries and Student Tuition

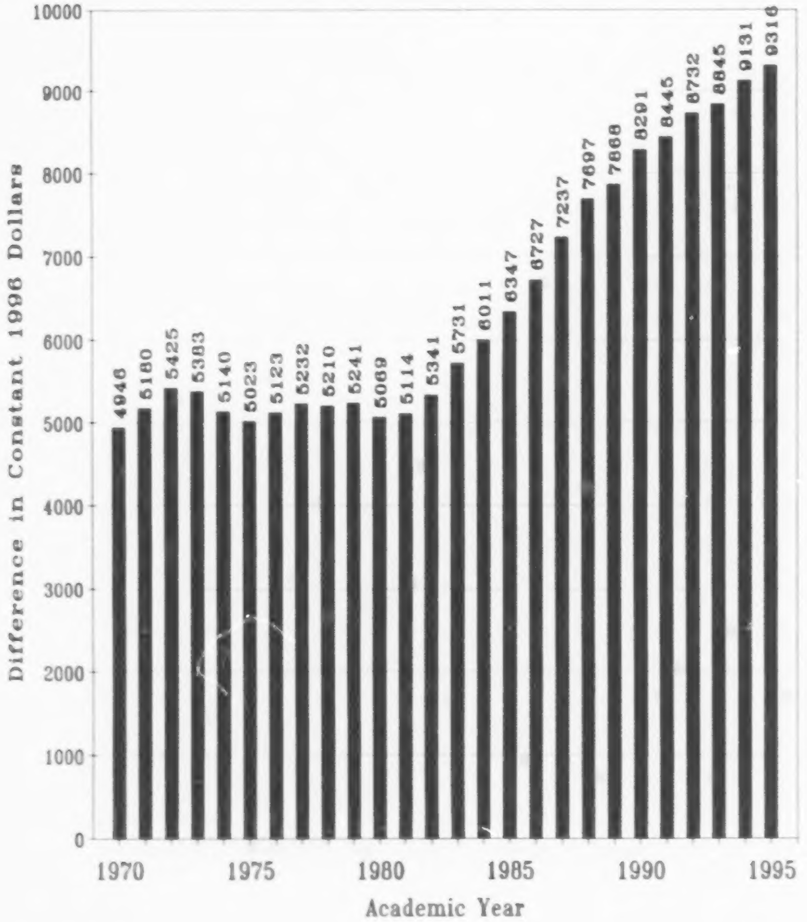
The time sequence of the faculty salary series is closely paralleled by the behavior of tuition rates over roughly the same period of time. In terms of "posted" rates, AY1970 annual tuition and required fees in public colleges and universities averaged $1320 measured in constant 1996 dollars. Fourteen years later this had risen only to $1353. Since then there has been a 56 percent increase to $2113 in AY1995.

Independent tuitions charged an average of $6267 in AY1970 and that level of charges was relatively constant through AY1981, when it was $6244. Starting in AY1982, a sustained increase began, culminating in an average rate of $11,428 in AY1995, and 83 percent increase in 14 years based on data reported in the *Statistical Abstract*.

"Posted" tuition rates may not necessarily reflect actual average revenue changes. A more rigorous approach is to divide reported tuition and fee revenue by reported full-time-equivalent (FTE) students. Although the time series available is shorter, this serves to confirm the "posted" rate findings. In AY1973 the figure for public colleges and universities was $1615 in 1996 dollars. By AY1983 the increase was only to $1669. From AY 1983 there was a 62 percent increase to $2704.

For independent institutions the comparable AY1973 figure was $6911, which by AY 1982 had decreased slightly to $6876. Starting with AY1983 there was a continuous increase totaling 62 percent through AY1991 when tuition and required fees per FTE student had reached $11,169, according to data from the *Digest of Education Statistics* published by the National Center for Education Statistics.

Average Annual Difference Between "Posted" Tuition and Required Fees in Independent Over Public Higher Education 1970 to 1995



A notable feature of this series is the relative stability of the ratio between the two sectors, with independent school charges continuing to range between four and five times public averages. The fact that a similar percentage increase in charges yields four to five times as much revenue in the private sector hardly needs to be emphasized.

State Appropriations

One might speculate that a decrease in the state subsidy to public institutions has forced up public tuitions which, in turn, permitted an even greater rise in private sector tuition, much of it devoted to improving faculty compensation. On examination, this proves to be too simple a scenario. There is ample evidence to establish that state and local governments have, for the past decade or more, been retreating from their previous commitment to public institutions of higher education relative to other demand on state funds (see OPPORTUNITY, June 1994). However, at least at the national level, there is no evidence that real appropriations per student have declined. Furthermore, when decline has occurred, it has not coincided with the timing of tuition change.

In AY1973, state and local appropriations to public colleges and universities were $5496 per FTE student, measured in constant 1996 dollars. In the ensuing 20 year period this measure has averaged $5777. It has remained within a range of plus or minus 9.7 percent and in FY1993, the latest available data, was $5667 according to data in the *Digest of Education Statistics*. The shape of the appropriations curve shows no obvious correlation with the compensation or tuition curves.

The fact that states have been decreasing their commitments to higher education relative to other demands on tax resources does not equate, as a national average, to a reduction in the real per student appropriations made available, but is, instead the result of escalating appropriations for other public purposes.

It is also true that the proportional reliance of public colleges and universities on state and local appropriations has been eroding. Although there are various ways of measuring the proportion of public higher education costs supported by tax sources, no one can doubt that it has been decreasing in recent years. Using the carefully collected data and consistent definitions of *State Profiles: Financing Public Higher Education* by Research Associates of Washington, the decline has been from 79.1 percent in AY1978 to 68.4 percent in AY1996. Only Florida and Nevada among the states have increased their percentage subsidization of public higher education over that time span. The national decrease has not occurred because states and localities have, on average, reduced real appropriations per student, but because higher education expenditures have risen well beyond the rate of inflation.

If, at least at the national level, there is no evidence that the coincidental increases in the spreads between tuition and faculty salaries at independent versus public institutions are the indirect result of withdrawal of real per student tax resources, what accounts for this change in historic relationships? If constant dollar tuition rates have not risen principally to replace lost revenue, they clearly have risen to finance additional spending, either discretionary or unavoidable. It should also be noted that such spending increases may not have increased the quality of the goods and services produced.

Salary Inflation

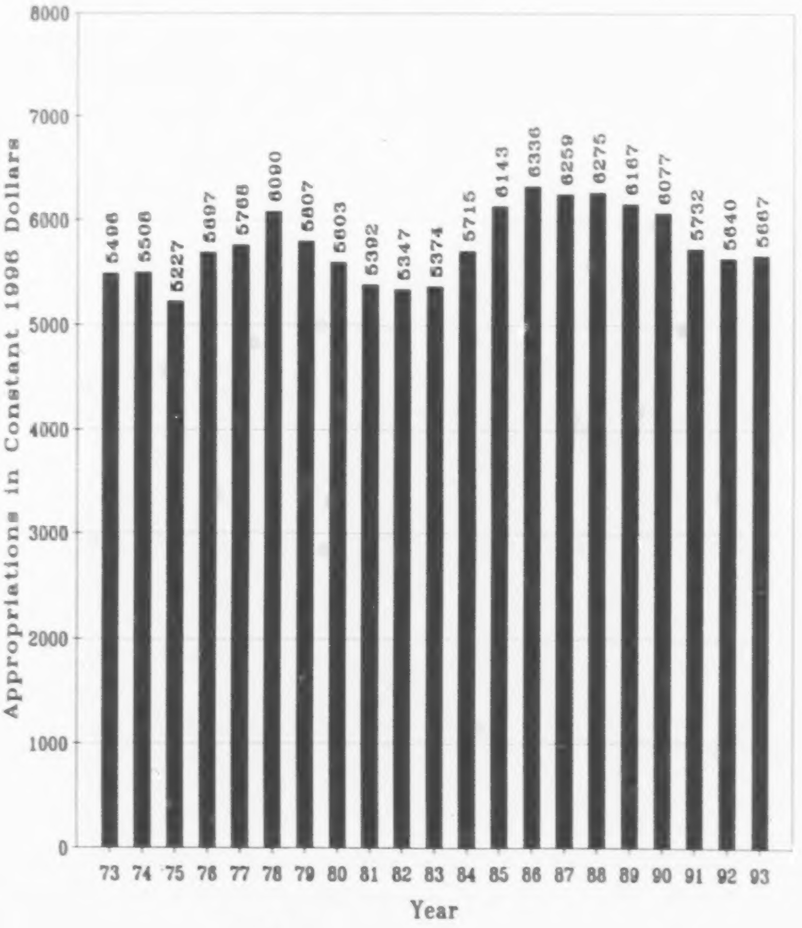
All of the foregoing constant dollar analyses use the Consumer Price Index (CPI) as the inflator. Have the prices of goods and services faced by colleges and universities (other than faculty compensation) increased at a rate that exceeds general inflation enough to force the increase in tuition outlined above? The answer is no.

From 1982-83 to 1994-95 the CPI rose 53.2 percent, while the Higher Education Price Index (HEPI) increased by 68.2 percent. (The HEPI is published by Research Associates of Washington in *Inflation Measures for Schools, colleges and Libraries.*) Thus prices faced by colleges and universities rose about 9.8 percent faster than general price levels. However, the larger increase in the HEPI can be entirely accounted for by increases in the subindexes for professional salaries (mostly faculty) and fringe benefits. Faculty compensation appears to have increased about 86.6 percent in this period and, since that represents 45 to 48 percent of the total, other cost components collectively seem to have inflated at very nearly the same rate as the CPI.

Thus it seems clear that, nationally and across both sectors, faculty compensation increases account for all of the additional spending that has been financed by tuition increases beyond inflation since the early 1980s. Whether devoted to compensation rate increases or numbers of faculty, the result is likely to be an increase in either the quality of the faculty attracted or retained or in the quality of the educational process employed.

A number of supply and demand factors may be contributing to forcing or enabling the ongoing tuition increases and differential faculty salary increases. Competition for PhDs in non-academic employment is an obvious possibility affecting both sectors but resulting in the public/private differential because of political pressures holding down public tuition. The effects of various student aid programs may be involved. Endowment incomes surely increased sharply since about 1980, enabling well-endowed institutions to compete more effectively for faculty. Increased separation between the real incomes of the most and least affluent may have allowed higher private

State and Local Government Appropriations per FTE
to Public Institutions of Higher Education
1973 to 1993



tuition while restraining increases in public tuition. All of these factors may be present. Measuring their relative influence presents a complicated but important area of research that deserves to be pursued.

Discussion and Conclusions

To the extent that the compensation gap between the public and private sectors persists or widens, the quality of opportunity offered by the two sectors will diverge. To the extent that the public sector is unwilling or is not permitted to raise sufficient tuition revenue to compete effectively for its most important resources, the gap will persist and increase.

This seems to be an instance of "unintended consequence." Typically, legislatures and governing boards display strong, and well intentioned, pressure to hold down public tuition rates in order to preserve maximum economic access. It has often been argued that there is a tradeoff between access and quality, but rigorous evidence is lacking and there is a tendency to hide behind the incomplete truism that you do not solve problems by throwing money at them.

Granted, the substantial and increasing gap between public and private sector faculty compensation does not, in itself, demonstrate increasing difference in the quality of education delivered in the two sectors. Still it is hard to avoid the conclusion that, over time, the best resources will go to the highest bidder. Recognizing also the possibility that working conditions for faculty may often be more pleasant and less demanding at independent institutions, the data above suggest, at least, a warning sign of a dangerous and undesired result.

As a nation our commitment to higher education opportunity has been strongly stated and often backed with action. We have also realized that both public and private sectors have a role to play. As a matter of public policy, however, there has been no intention to assign those roles on the basis of a bifurcation of quality and economic class. Rather, the ideal has been to tailor available opportunity to the varying needs and personal preferences of students.

If public and independent institutions are to become more competitive, if they are to be compared in terms of accomplishments, if they are both to have access to public funds in one way or another, then the conditions under which they operate must also become more alike. If not, there will inevitably be a split into a higher quality sector and a lower quality sector. The most important factors:

1. Publics must be allowed to become more selective and privates must become less selective.
2. Public pricing must be less controlled and/or private pricing must come under greater control.
3. Public accountability for non-tax resources must be reduced and private accountability for tax-derived resources must be increased (or introduced).

Average Salaries and Fringe Benefits of Full-time 9 Month Teaching Faculty in 4 Year Colleges and Universities*
1970 to 1996

Year	Public Current	Public Constant	Private Current	Private Constant	Diff	Percent Diff
1970	$15,000	$61,320	$15,300	$62,546	$1226	2.00%
1971e	$15,200	$59,067	$15,200	$59,067	$0	0.00%
1972	$16,300	$61,239	$16,900	$63,493	$2254	3.68%
1972e	$18,200	$65,702	$18,400	$66,424	$722	1.10%
1974	$17,900	$59,321	$18,500	$61,309	$1988	3.35%
1975	$19,100	$56,937	$19,400	$57,831	$894	1.57%
1976	$20,200	$56,277	$20,600	$57,392	$1114	1.98%
1977e	$21,000	$55,272	$21,500	$56,588	$1316	2.38%
1978	$22,300	$55,014	$22,700	$56,001	$987	1.79%
1979	$23,900	$53,895	$24,800	$55,924	$2030	3.77%
1980	$26,000	$51,740	$26,200	$52,138	$398	0.77%
1981	$28,600	$51,051	$29,300	$52,301	$1250	2.45%
1982	$31,300	$51,426	$32,200	$52,905	$1479	2.88%
1983	$34,100	$53,673	$35,100	$55,247	$1574	2.93%
1984	$35,400	$53,737	$37,500	$56,925	$3188	5.93%
1985	$38,200	$55,810	$40,200	$58.732	$2922	5.24%
1986	$40,700	$57,835	$43,400	$61,671	$3837	6.63%
1987	$43,600	$60,560	$46,400	$64,450	$3889	6.42%
1988	$45,400	$60,564	$48,900	$65,233	$4669	7.71%
1989	$48,600	$61,916	$52,400	$66,758	$4841	7.82%
1990	$51,700	$62,867	$56,000	$68,096	$5229	8.32%
1991	$54,500	$62,893	$58,600	$67,624	$4731	7.52%
1992	$56,300	$62,943	$62,400	$69,763	$6820	10.83%
1993	$57,500	$62,330	$64,700	$70,135	$7805	12.52%
1994	$59,300	$62,739	$67,700	$71,627	$8887	14.17%
1995	$61,500	$63,161	$69,700	$71,582	$8421	13.33%
1996	$63,020	$63,020	$72,070	$72,070	$9050	14.36%

FY96=100. *Excludes church-related institutions. e=estimated. Source: AAUP Annual Surveys.

High School Dropout Rates by Gender and Race/Ethnicity 1967 to 1995

High school dropout rates appear to be on the increase again in the 1990s, after generally declining throughout the 1980s.

In the recently released October 1995 Current Population Survey report on school enrollment, the Census Bureau reported that 544,000 students had dropped out of high school during the previous 12 months in the United States. This was up from 347,000 high school dropouts as recently as 1990, and was the largest number of high school dropouts since 1982. Between 1990 and 1995, while the number of high school graduates increased by 16.4 percent, the number of reported high school dropouts increased by 56.8 percent.

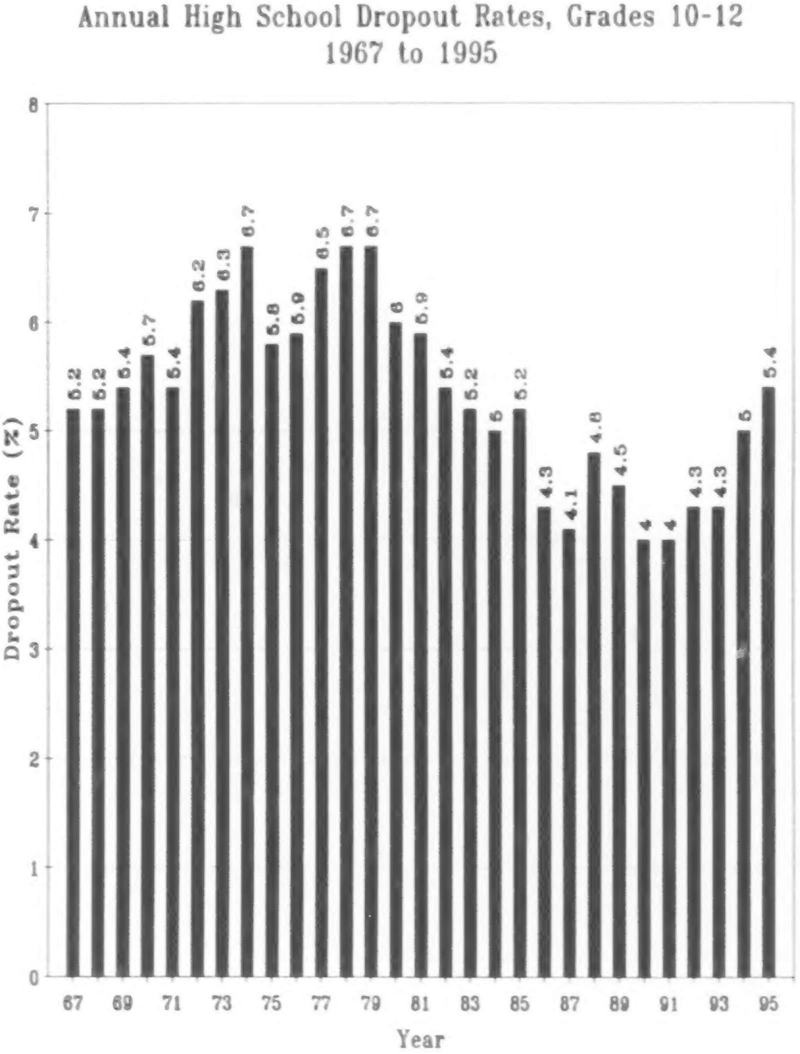
The dropout rate in 1995 was 5.4 percent, up from 4.0 percent in 1990 and 1991, and was the highest dropout rate since the 5.4 percent rate in 1982.

High school dropout rates declined steadily and substantially during the 1980s, from 6.7 percent in 1979 to 4.0 percent by 1990--a decline of 2.7 percent. The increase of 1.4 percent between 1991 and 1995 means that half of the gains in reducing high school dropout rates achieved in the 1980s have been erased in the first half of the 1990s. Apparently the substantial progress made reducing high school dropout behavior of high school students in the 1980s is being rapidly reversed in the 1990s.

The Policy Context

Universal education was deemed by this country's founders as essential to the functioning of their design for the American experiment in democratic government. Only an educated and literate citizenry would be informed enough to choose political leaders who represent the interests of citizens in the often difficult and complex issues that government could be expected to face. Universal education spread during the 19th century and eventually was adopted in all states.

Gradually states have extended universal education, making it compulsory and extending the years of free schooling offered and required. Currently every state requires school attendance through age 16. By 1996 34 states had adopted compulsory school attendance through age 16, 8 states through age 17, and 9 states through age 18. These nine states are: **California, Ohio, Oklahoma, Oregon, Tennessee, Utah, Virginia, Washington and Wisconsin.**


Annual High School Dropout Rates, Grades 10-12
1967 to 1995

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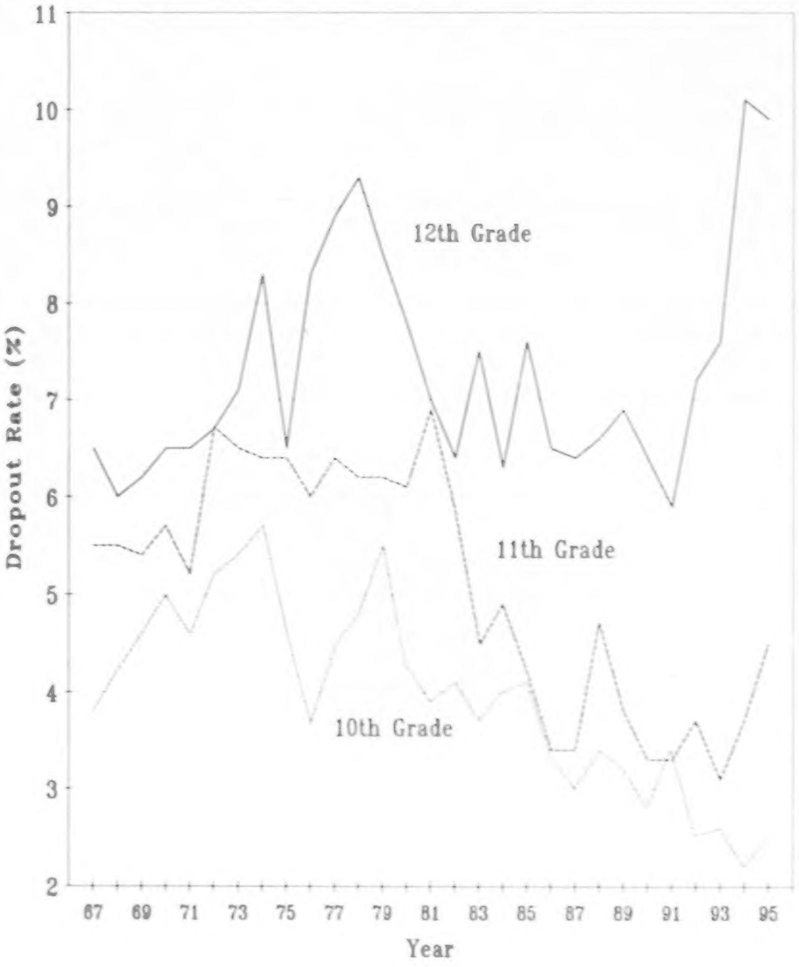
Annual High School Dropout Rates by Grade
1967 to 1995



In 1990, President Bush and the governors of the states established the National Education Goals. The second of the eight goals reads:

> ***By the year 2000, the high school graduation rate will increase to at least 90 percent.***
>
> *Objectives:*
>
> - *The Nation must dramatically reduce its school dropout rate, and 75 percent of the students who do drop out will successfully complete a high school degree or its equivalent.*
> - *The gap in high school graduation rates between American students from minority backgrounds and their non-minority counterparts will be eliminated.*

Depending on how that goal is to be measured (when, using what data), these data suggest--at the very minimum--that necessary progress toward the stated goal is not being made in the 1990s.

The Economic Context for High School Attrition

Since about 1973 the labor market has been brutally redistributing income among workers according to their educational attainment. Those who have the most formal education have the highest incomes have experienced real gains in their incomes during the last two decades. Those with least formal educations have the lowest incomes have experienced substantial real declines in their incomes and living standards.

This redistribution has been very large and persistent. In fact this redistribution may be accelerating in the 1990s. It clearly signals the end of the high wage-low skill labor economy. Neither minimum wage laws, nor labor unions nor the social safety net are likely to prevent or even slow this decline in incomes and living standards they afford for those who lack productive skills for their employers that justify higher wages.

The economic forces causing this income redistribution describe in some fashion a knowledge-based economy increasingly dependent on ever greater levels of educational attainment in its workforce. These economic forces include rapidly changing and ever more complex and demanding technology, and intra- and international competition in the quality and cost of goods and services. Both changes require increased labor force productivity, and the productivity of human labor is increasingly dependent on education and training beyond the secondary school level. In many respects this economy, on which our individual and collective prosperity depends, is one based on knowledge. Those who have it can participate, and those who don't have been increasingly left out since about 1973.

The bottom line is simple: neither individuals, nor families, nor communities, states or the country can afford to passively watch increases in high school attrition. By every measure we know of, individuals who choose this course are also choosing to begin a downward spiral to their lives, beginning in or near poverty with neither hope for improvement nor an expectation of a social safety net to save them from their chosen adversity. In their downward spiral they will adversely effect their families, their communities, their states and the country as a whole.

The Data

The data used for this analysis and report were collected by the Census Bureau in the October 1995 *Current Population Survey*, and have been recently published at the Census Bureau's web site at:

http://www.census.gov/population/www/socdemo/school.html

The data are available in Table A-4, "Annual High School Dropout Rates by Sex, Race, Grade, and Hispanic Origin: October 1967 to 1995," that may be directly printed to a connected printer. The complete P20-492 report may be downloaded and printed through free Adobe Acrobat software.

Bruno, R. R., and Curry, A. E. *School Enrollment-Social and Economic Characteristics of Students: October 1995 (Update).* Current Population Reports, P20-492. Washington, DC: U.S. Department of Commerce, Bureau of the Census.

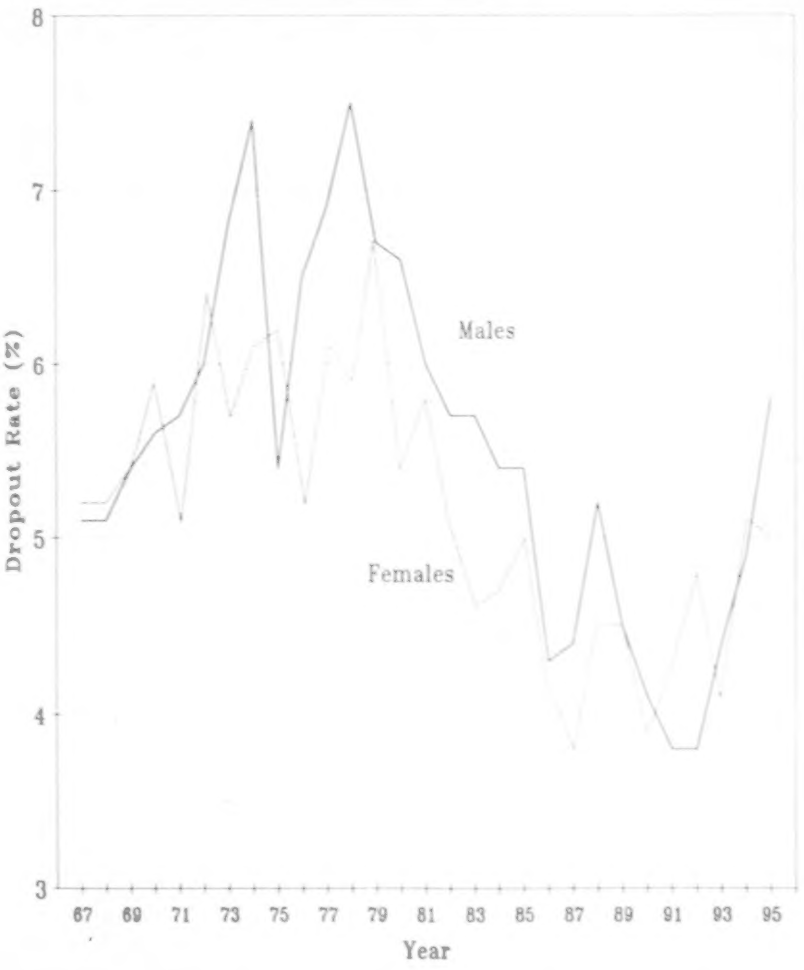
The Census Bureau defines high school dropout to be a person who has left high school during the previous year from the time of the October Current Population Survey without graduating. High school graduation includes completing high school with the GED equivalency test. A more detailed explanation of the estimation method is detailed in Appendix B-3 to the complete report.

Annual High School Dropout Rates

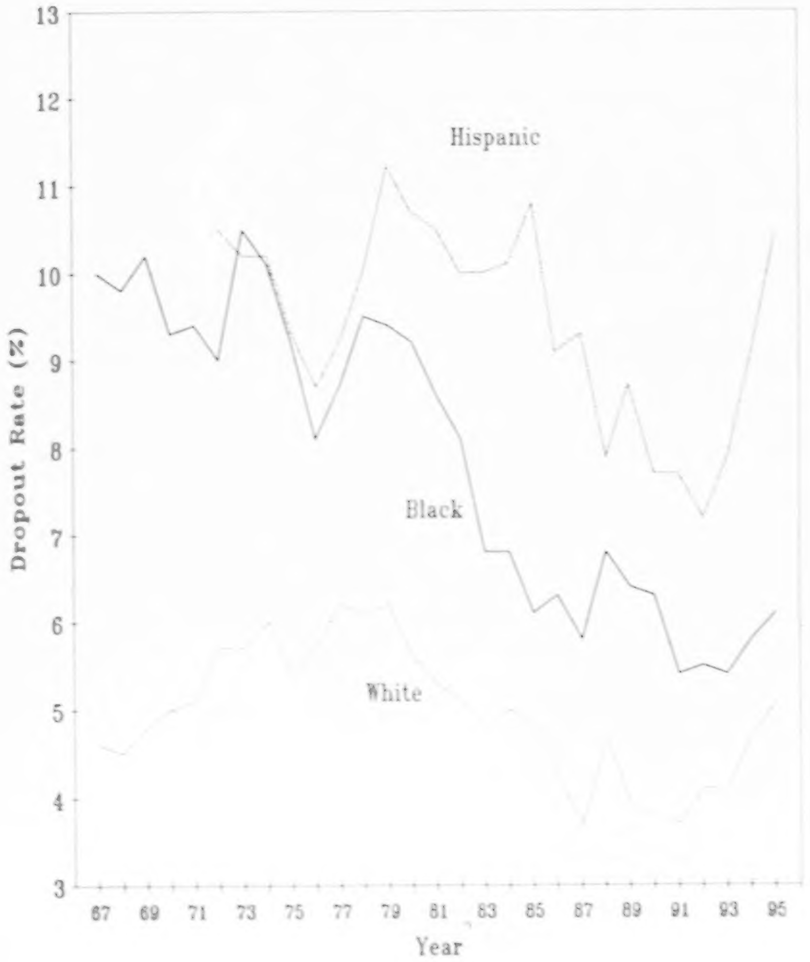
In October of 1995, there were 10,106,000 students enrolled in grades 10 through 12 in public and private high schools in the United States. This number has risen steadily from the low of 8,612,000 students in 1991--18 years after the bottom of the post World War II baby bust in 1973. The fluctuations in births after World War II have resulted--inevitably--18 years later in the numbers of high school graduates and potential college students.

Each year students leave high school--presumably following the end of state compulsory school attendance laws--prior to graduation. (We note that compulsory school attendance laws must not be enforced because some states, like **California**, with compulsory school attendance laws through age 18 have extraordinarily high dropouts rates from high school.

Annual High School Dropout Rates by Gender, Grades 10-12
1967 to 1995



Annual High School Dropout Rates by Race/Ethnicity
Grades 10 to 12, 1967 to 1995



The public high school graduation rate in California in 1994 was 66.3 percent, well below the national average of 70.0 percent, and ranking California 39th among the states.)

In the October 1995 Current Population Survey, the Census Bureau estimated 544,000 students had left high school without diplomas or equivalency certificates. This is up from 497,000 the previous year, 404,000 the year before that, and from a low of 347,000 in 1990--the lowest number for any year since 1967 when these data were first reported. The largest number of dropouts was 744,000 in 1980.

The dropout rate provides a way to compare dropout behavior over time since fluctuations in numbers are controlled. In 1995 the high school dropout rate was 5.4 percent (544,000 dropouts divided by 10,106,000 students). The dropout rate, that had been declining from 1979 (6.7 percent) to 1990 (4.0 percent), began to increase in 1992. The increases again in 1994 and 1995 prompted this analysis and report.

The increase in the high school dropout rate between 1991 and 1995 from 4.0 to 5.4 percent means that the number of students leaving high school without diplomas/GEDs was about 140,000 more in 1995 than what would have occurred if the lower 1991 rate had continued through 1995.

Dropouts by Grade

High school dropout rates are lowest in the 10th grade, and highest in the 12th grade. Most of the decline in dropout rates that occurred during the 1990s occurred in the 10th and 11th grades.

More interesting, while the dropout rates have increased for all grades, the increase has been smallest in the 10th grade, and largest in the 12th grade. Here a possible data redefinition issue must be identified. In 1992 the Census Bureau redefined educational attainment for all Current Population Surveys, from years of school completed to highest degree earned. At the high school level this meant that completing four years of high school, the former definition of completion, was replaced with the diploma/GED definition. In 1992 the dropout rate increased by 0.3 percent, which could be attributed to the change in definition. In 1993 the dropout rate was unchanged, but then increased by 0.7 percent in 1994 and again by 0.4 percent in 1995.

The issue of definition may be examined here from the timing perspective. The dropout rate for seniors appears to have begun to increase in 1992, while for juniors it began in 1994 and for sophomores in 1995. Moreover, economic cycle effects on high school attrition may be operating in these data. Clearly additional years of Current Population Survey data will verify or challenge these observed trends.

Dropouts by Gender

In October 1995 297,000 males and 247,000 females left high school during the previous 12 months without graduating.

Throughout much of the 1967-95 period, males dropped out of high school at greater rates than did females. In 19 years the dropout rate for males exceeded that for females, and in 7 years the rate for females exceeded the rate for males. Since the early 1990s the dropout rate for males has increased by 2.0 percent, while it has increased by about 0.5 percent for females.

Dropouts by Race/Ethnicity

In October 1995 402,000 whites, 97,000 blacks and 145,000 Hispanics left high school during the previous 12 months without graduating.

(Note: The chart on the previous page plots moving 3-year average dropout rates for Hispanics and blacks to highlight trends and reduce statistical spikes that result from small samples.)

Throughout the 1990s the high school dropout rate declined for all three groups. Between 1979 and 1990 the dropout rates declined by 2.4 percent for whites, 1.9 percent for blacks and 1.8 percent for Hispanics. Then, since the early 1990s, dropout rates have increased. Generally the dropout rates have increased the most for Hispanics and least for blacks.

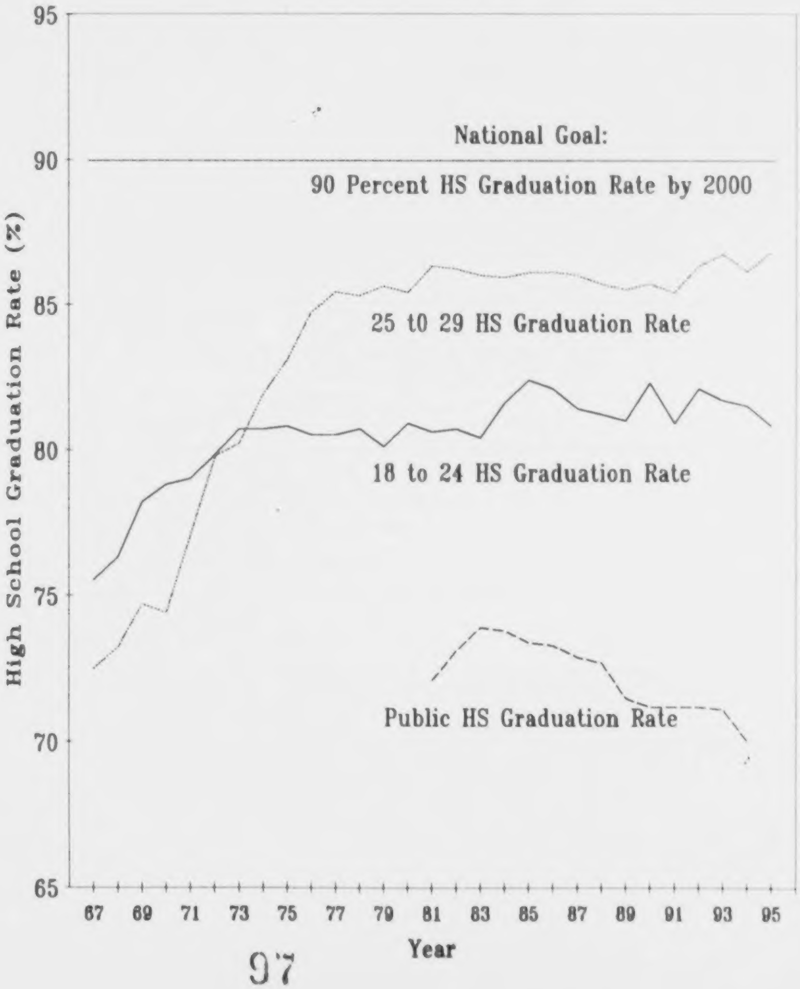
Comparisons with Graduation Rates

In an important sense, high school dropout rates are leading indicators of high school graduation rates. Dropouts are counted when they occur, which is generally before they would have been counted as graduates.

The chart on this page compares three measures of high school graduation rates:

- The *public high school graduation rate* is simply a division of the number of regular public high school graduates for the years shown by the number of ninth graders three years earlier. These data are collected by NCES but are not published. Regular high school graduates do not include students leaving high school with other diplomas. The largest numbers of such recipients are in California (49,840 in 1994), with more than 1000 each in Florida, Georgia, Michigan, New York, South Carolina and Utah. Also, high school equivalency (GED) recipients are not counted. Substantial numbers of these were awarded in Florida (15,000), New York (11,000), Louisiana (10,000), New Jersey (9000) and more than 5000 each in Missouri, Ohio, Oklahoma, Oregon and Pennsylvania.
- The *18 to 24 year old high school graduation rate* includes both high school diplomas and equivalency certificates, and may include some students still enrolled in high school. These data are collected in

High School Graduation Rates
1967 to 1995



the October Current Population Survey and reported in the P20 reports on school enrollment.

- The *25 to 29 year old high school graduation rate* also includes both high school diplomas and equivalent certification. These data are collected in the March Current Population Survey and reported in the P20 reports on educational attainment.

None of these three measures of high school attrition/graduation offer any real hope of attaining the national education goal of a 90 percent high school graduation rate by the year 2000.

In fact, considering the leading indicator (youngest students) at the bottom of these three, and the lagging as the top (oldest persons), the 25 to 29 year old high school graduation rate may decline in future years.

Our Conclusions

As wide as we cast our nets to gather relevant data, we can gather no data to suggest that the nation is making progress toward and will achieve its goal of a 90 percent high school graduation rate by 2000. Nor will we eliminate differences in graduation rates for different racial/ethnic groups.

The scenario we see in these and other closely-related data is that students are falling behind in high school (enrolled below modal grade at increasing rates), dropping out of high school at increasing rates, and therefore graduating from high school with regular diplomas at declining rates.

A growing number of these dropouts are returning to earn GED equivalency certification. The declining regular high school graduation rates are offset by increasing GED certification. The net, end result is no gain in high school graduation rates.

Life's prospects for the 13 percent or so who do not graduate from high school are bleak and getting bleaker. Real incomes for high school dropouts have been declining since the early 1970s, and this decline may be accelerating. Their lives are locked into a downward spiral, and the bottom of the decline is not in sight.

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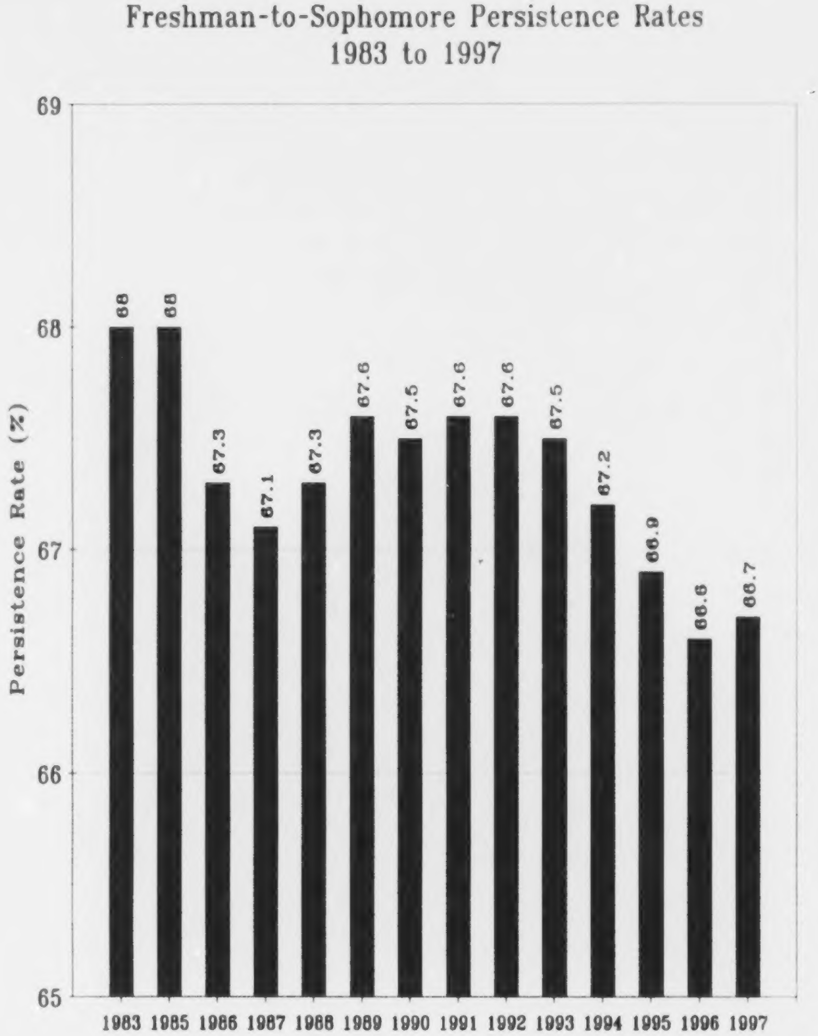
To get home, first . . . . . . you have to get to second base

Freshman-to-Sophomore Persistence Rates 1983 to 1997

The long and challenging path to a college degree involves many hurdles. Among these are high school graduation, college access and persistence in college through to graduation. One of these hurdles, once admitted to college, is persistence through the freshman year to the beginning of the sophomore year of college. Only about two out of three freshmen who start college are still enrolled at the beginning of their sophomore year in the same college.

The freshman year of college is probably for many people the first great transition of their young lives. By social design it is a critical step toward emancipation from the family toward self-sufficiency, true independence and personal responsibility. The freshman year is full of perils for young people whose lives have been structured by family, school, friends and familiar communities. Wrenched from this network of support, emersed in serious academic challenge, staying up late with morning classes a few hours away, exposed to alcohol and other temptations in excess, some students are more successful than others at coping. Some students make it to the sophomore year of colleges while others do not.

Here we explore student persistence from college admission to the sophomore year of college. Our focus is on the characteristics of freshmen that explain success, particularly the pre-college academic characteristics of students.



This is a broad-ranging review of freshman-to-sophomore retention data and trends. It begins by updating our initial review of ACT survey data for about 2600 2-year and 4-year collegiate institutions as we first reported in the February 1996 issue of OPPORTUNITY. We extend this review with our own regression analysis of freshman-to-sophomore retention rates for 1066 bachelor-degree granting institutions.

Some of our major findings may be summarized as follows:

- Retention rates from the freshman to the sophomore years of college have declined slightly since 1983. Most of this decline has occurred in just the last four years. Thus, the decline in retention rates appears to be increasing during the 1990s, during a period of strong job growth and low unemployment.
- Institutional retention rates are highly correlated with the academic selectivity of institutions. Retention rates are highest in the most selective institutions, and lowest in the least selective institutions.
- Controlling for academic selectivity, retention rates are usually higher in private institutions than in public institutions.
- Controlling for academic backgrounds and other external influences, retention rates are notably higher in Catholic colleges than they are in any other collegiate institution classified by control.
- Between 1991 and 1997, retention rates have declined across institutions of all levels of academic selectivity, but the decline is least among the highly selective and greatest among the least selective colleges and universities.

Our analysis of retention rates in baccalaureate degree granting colleges and universities suggests that some institutions do better jobs holding their enrolled freshmen to the sophomore year of college than do other institutions, and we rank and name 1066 of them.

The Data

In this analysis, student persistence and institutional retention are used interchangeably. Data used in this analysis come from two main sources.

The initial analysis reported here is based on data collected by ACT in its annual Institutional Data Questionnaire (IDQ). This annual survey of American colleges and universities collects a wide variety of institutional and student data that is used by ACT to help students plan for the college admissions process. These data are published by ACT in ACT's *College Planning/Search Book*, and are used in ACT's assessment score reports, DISCOVER program, and other services and reports. The institutional data include majors available, student profiles, costs, admissions selectivity, special programs, tests required, deadlines and more.

College Planning/Search Book, A Workbook and Resource for College Planning, 199X-9X Edition. Iowa City, IA: ACT.

In the 1997 survey, 2554 public and private institutions participated in the ACT IDQ survey. They are classified by level and control as follows:

	Public	Private
PhD	201	149
MA/1st Prof	230	472
BA	72	495
Associate	770	165
Totals	1273	1281

Institutions were also asked to report their admissions selectivity in one of five categories defined as follows:

- *Highly selective:* Majority of

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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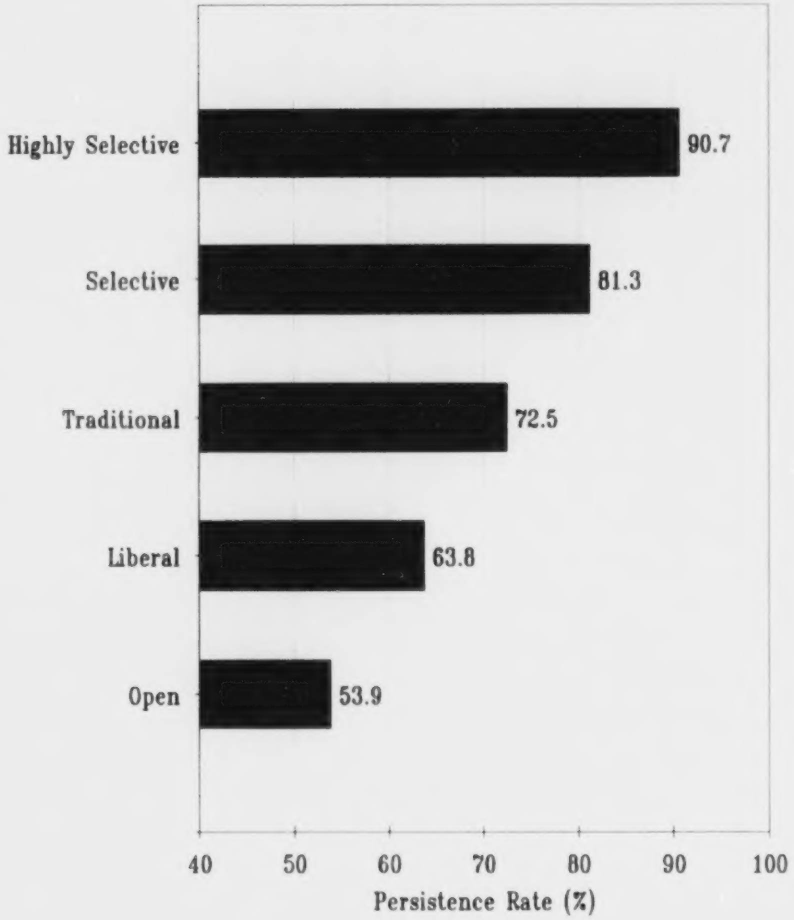
Freshman-to-Sophomore Persistence Rates
by Institutional Academic Selectivity
1997



accepted freshmen in top 10 percent of high school graduating class. (ACT: 27-31, SAT: 1220-1380)

- *Selective:* Majority of accepted freshmen in top 25 percent of high school graduating class. (ACT: 22-27, SAT: 1030-1220)
- *Traditional:* Majority of accepted freshmen in top 50 percent of high school graduating class. (ACT:20-23, SAT: 950-1070)
- *Liberal:* Some freshmen from lower half of high school graduating class. (ACT: 18-21, SAT: 870-990)
- *Open:* All high school graduates accepted to limit of capacity. (ACT: 17-20, SAT: 830-950)

The self-reported classifications by academic selectivity for each institution are reported in ACT's *College Planning/Search Book.*

ACT's annual drop-out and graduation rate survey reports were first compiled in 1983 and have been reported each year since 1985. Copies of these reports--known as the National Dropout Rate tables--are available from Dr. Wes Habley, Educational Services Division, ACT, at (319) 337-1483.

Persistence

The chart on page 1 plots the simple mean freshman-to-sophomore persistence rate for 2558 colleges and universities. Over the last 15 years, this rate has declined slightly, from 68 to 66.7 percent. About 70 percent of this decline has occurred in just the last 5 years.

On a base of 1,610,000 first-time freshmen entering college in the fall of 1995 from high school, the decrease in freshman-to-sophomore persistence rate of 1.3 percent translates into a loss of about 21,000 additional freshmen before the sophomore year in the fall of 1996.

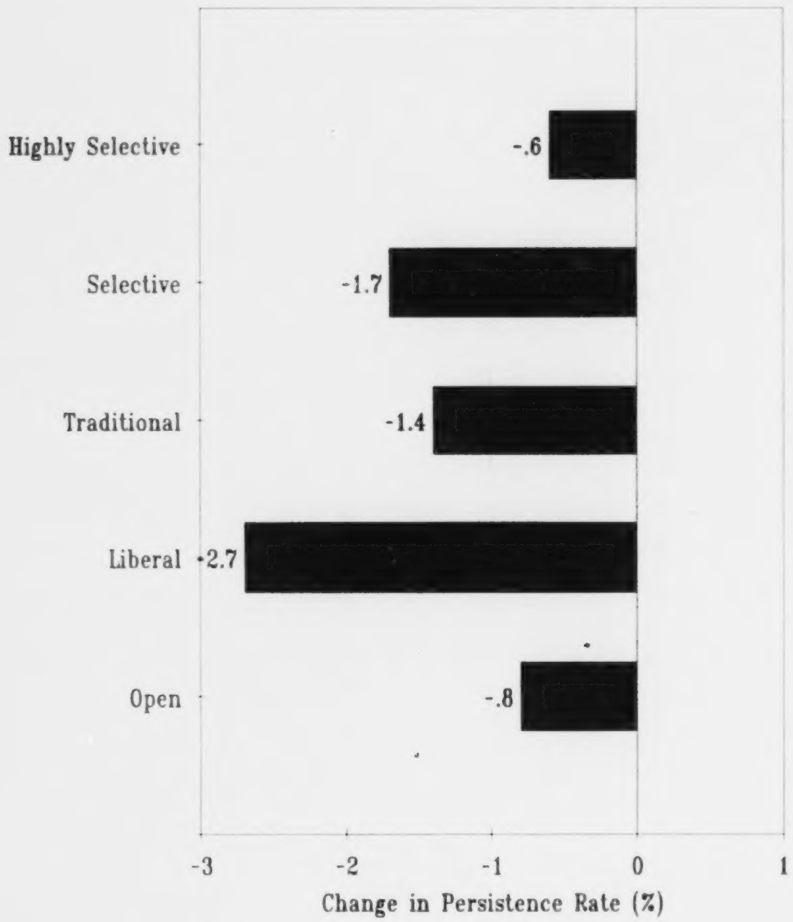
In this issue of *OPPORTUNITY* we are primarily interested in the relationship between academic characteristics of freshman classes of students and persistence rates. The chart on this page shows persistence rates for institutions by their academic selectivity.

Persistence by Academic Selectivity

In the 1997 ACT report, persistence rates ranged from an average of 53.9 percent for institutions that practices open admission, to an average of 90.7 percent for those institutions that practiced highly selective admission. Among both public and private institutions at each level of academic selectivity, the average persistence rates are generally highest among PhD granting institutions and lowest among the associate degree granting colleges.

Between 1991 and 1997, persistence rates declined for institutions at all levels of academic selectivity. The declines were greatest among institutions with liberal admissions practices, and least among the highly selective institutions.

Change in Freshman-to-Sophomore Persistence Rates
by Institutional Academic Selectivity
1991 to 1997



Persistence by Control

The ACT report permits the disaggregation of institutional by control in public and private categories. The top chart on the following page summarizes freshman-to-sophomore persistence rates for public and private institutions at the five levels of academic selectivity.

The results are consistent with the more aggregated data: persistence rates increase with academic selectivity for both public and private institutions. Here, however, an initially interesting difference becomes apparent. At each level of academic selectivity, persistence rates are higher in private than they are in public institutions. This difference is greatest among the least selective institutions.

Between 1991 and 1997, persistence rates declined generally, at each level of academic selectivity, and at most--but not all--levels of selectivity and control. As shown in the second chart on the following page, declines in persistence rates were greater among private colleges than they were among publics at each selectivity level. Among private colleges and universities, the decline in persistence rates was least among highly selective institutions, and greatest among least selectivity institutions. And, among highly selective public universities, freshman-to-sophomore persistence rates actually increased by a substantial 2.7 percentage points between 1991 and 1997.

Persistence by Type

Institutional type consists of 2-year, 4-year, MA/1st professional, and Phd. Between 1991 and 1997 persistence rates have declined at each of these institutional types, but primarily in 4-year colleges, 87 percent of which are private.

	1991	1997	Chnge
2-year	56.1%	55.4%	-0.7%
4-year	73.0	69.9	-3.1
MA/1st prof	74.4	73.4	-1.0
PhD	79.5	78.6	-0.9

Persistence by Type and Control

When we disaggregate the data by both institutional control and type, the persistence rates are as follows. The largest declines between 1991 and 1997 have occurred in private 2-year and 4-year colleges:

	1991	1997	Chnge
Pub 2-year	52.2%	52.6%	+0.4%
Prv 2-year	71.7	68.2	-3.5
Pub 4-year	69.6	68.2	-1.4
Prv 4-year	73.4	70.1	-3.3
Pub MA/1st pr	69.2	68.6	-0.6
Prv MA/1st pr	77.3	75.7	-1.6
Pub PhD	76.0	75.9	-0.1
Prv PhD	83.5	82.3	-1.2

Persistence at Institutions

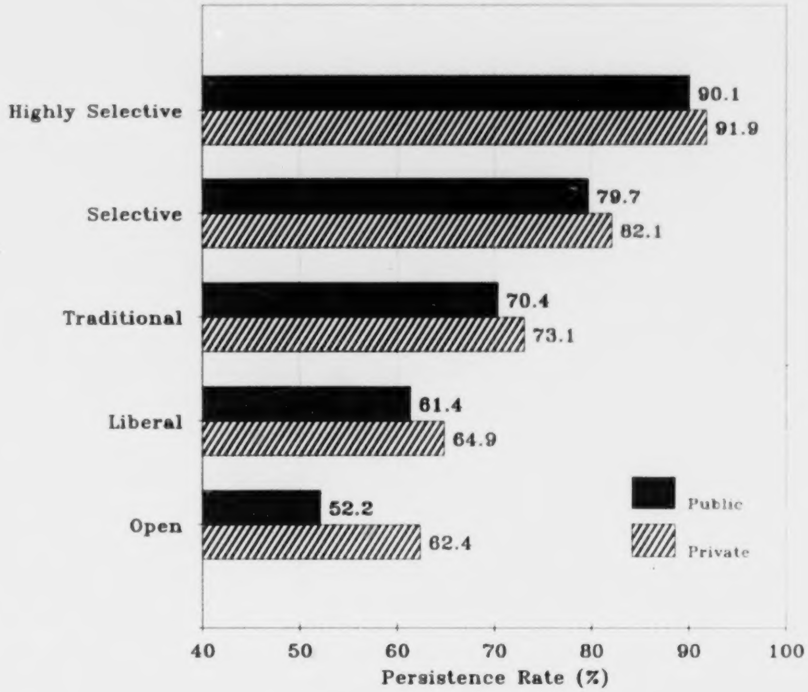
The second part of this analysis of persistence rates between the freshman and sophomore years of college consists of developing a predicted retention rate and comparing it to the actual retention rate for a large set of institutions. The purpose of this analysis is to see which institutions do a better than average job of supporting the freshmen they enroll, and which do a worse than average job.

The basis for the predicted rate is clear in the data presented to this point: institutions vary widely in their retention rates based on the academic backgrounds of the freshmen that they enroll. That is: student persistence is largely determined by each student's academic background, and institutions tend to enroll freshmen from different segments of this distribution of backgrounds. Thus, institutions that enroll freshmen from the high end of this distribution should have high retention rates, institutions that enroll from lower levels could be expected to have lower retention rates, and those who enroll freshmen from the lowest ranges of academic backgrounds could be expected to haye the lowest retention rates. Other factors external to the institution could influence this, and what remains is then attributed to environmental factors under the institution's control.

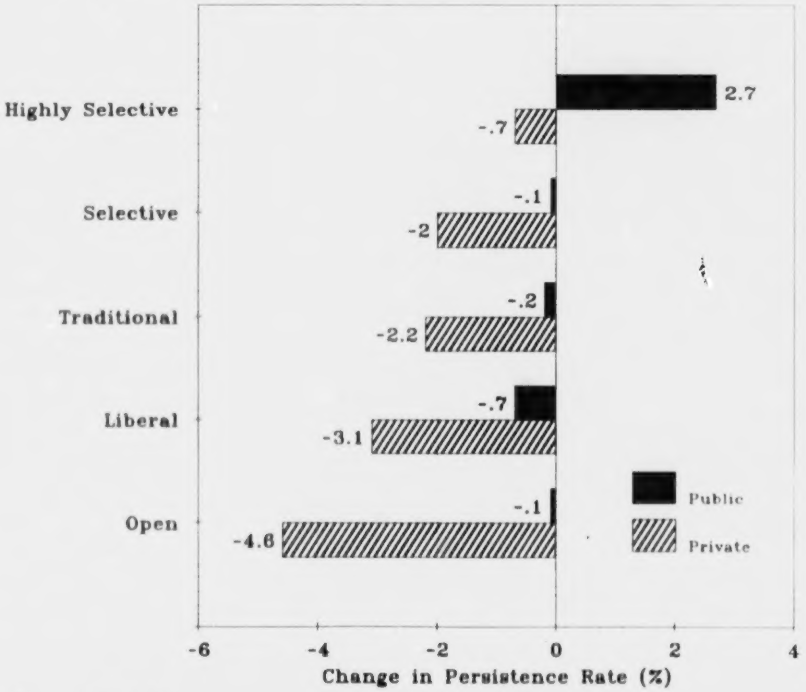
The data. The approach and regression model developed here are similar to that reported in the April issue of OPPORTUNITY. Compared to that study of institutional graduation rates, the data used here are necessarily somewhat different. The necessity derives from the difference in cohorts tracked. Here, the freshman-to-sophomore retention rate is the average percent of freshmen entering in 1991 to 1994 who returned the following fall. These data have been collected by U.S. News and World Report, and published in their college guide.

U.S. News and World Report. (1996.) *America's Best Colleges.* Washington, DC.

Freshman-to-Sophomore Persistence Rates by Academic Selectivity and Control, 1997



Change in Freshman-to-Sophomore Persistence Rates by Academic Selectivity and Control, 1991 to 1997



Likewise, the independent influences on the average retention rates are tracked with these cohorts. The mean/midpoint SAT (or converted ACT composite) score was for freshmen admitted in 1992, as reported in the 1993 edition of *America's Best Colleges.* The data for the proportion of freshmen living on campus was collected by ACT in its annual Institutional Data Questionnaire Survey and has been published in ACT's 1995 *College Planning/Search Book.* The data on part-time enrollment are from the federal IPEDS survey, as reported by the National Center for Education Statistics on CD.

The model. The regression model used to determine the predicted retention rate for each of the 1063 bachelor degree granting colleges and universities in our sample is similar to that developed to determine predicted institutional graduation rates (OPPORTUNITY, April 1997). The model for retention is:

$$\text{Ret95} = .207 + .000558(\text{SAT92}) + .0268(\%\text{OC95}) - .0584(\%\text{PT92})$$

Results. The actual 1995 retention rate, SAT score, percent of freshmen living on campus and percent of students enrolled part-time for each of the 1063 institutions in the sample are shown in the long table beginning on page 8. So too is the predicted retention rate calculated with these data. Institutions are then ranked by the difference between their actual and predicted freshman-to-sophomore persistence rates (residual).

Ranked in this fashion institutions are normally distributed as follows:

Residual	Institutions
+15.0% or more	13
+10.0% to 14.9%	66
+5.0% to 9.9%	169
0 to 4.9%	311
-5.0% to -0.1%	274
-10.0% to -5.1%	149
-15.0% to -10.1%	56
LT -15.0%	25

This ranking indicates that the actual retention rates for some institutions are well above their predicted rates. These institutions appear to be providing especially supportive environments on campus for the freshmen that they enroll. At the other extreme some institutions have large negative residuals. These institutions appear to provide especially weak supportive environments for the students that they enroll.

Freshman-to-Sophomore Retention Rate Models
(coefficients and T-statistics)

Equation (Cases)	Constant	SAT92	%PT92	%OC95	Catholic	R^2
1 (1065)	0.1633	0.00061 (35.32)				54.04%
2 (1060)	0.1561	0.00061 (36.04)			.0422 (5.99)	55.55%
3 (1060)	0.2217	0.00056 (31.43)	-0.103 (-7.02)		.0613 (8.26)	57.52%
4 (1060)	0.1933	0.00056 (29.72)	-0.087 (-5.47)	0.029 (2.90)	0.0608 (8.22)	58.24%
5 (1063)	0.207	0.000558 (28.84)	-0.0584 (-3.68)	0.0268 (2.69)		55.5%

In addition to the institutional ranking that follows, we have calculated enrollment-weighted mean retention rates for 4-year institutions by state. States are ranked by their residuals in the adjacent chart.

This model falls short of explaining all student retention rates. Partly this is by design: the environmental factors within institutions that explain supportive or non-supportive academic and social environments for student persistence and success are not included here because we do not know how to measure them with available data.

Generally, the process of statistically modeling persistence rates of institutions can be extended in at least three ways: adding omitted variables, transforming included variables, and testing interactions between included variables. We offer the data base assembled for this study to those subscribers who wish to extend our analysis further. Contact OPPORTUNITY for details.

Institutional Control

As in our previous study of institutional graduation rates, we again found a clustering of Catholic institutions with large positive residuals. Also, as noted earlier in this analysis, at each level of academic selectivity, private institutions had greater persistence rates than did public institutions.

For this analysis, we decided to examine the relationship between institutional control and persistence rates in somewhat more detail. Beyond the basic regression equation used to rank the 1063 institutions in our sample, we added 0/1 dummy variables for institutional control as reported by IPEDS. We found the results to be fascinating. Only Catholic institutions had a positive and statistically significant coefficient on control. This added nearly 6 percent to their persistence rates. The coefficients were negative and significant for Presbyterian, Methodist, Baptist, Mormon, other protestant, and other controlled institutions. The coefficients were not statistically significant for Lutheran, 7th Day Adventist, independent and public institutions classified by control. Based on this analysis, it would appear that the advantage enjoyed by private colleges compared to public institutions in retention rates is limited to the very strong showing of Catholic institutions alone.

Summary and Conclusions

This analysis has focused on the proportion of freshmen beginning their higher education at an institution that return for their sophomore year at the same institution. Previous research has found that high attrition occurs in this first year of college.

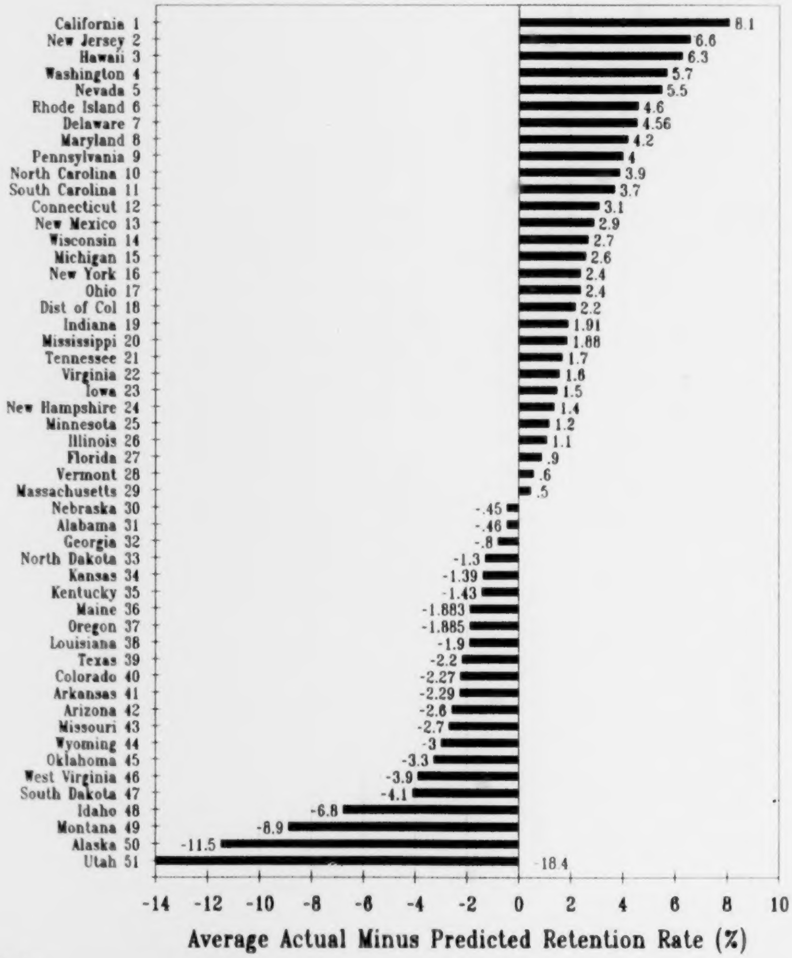
Analyzing institutional data, the most obvious and important finding is that differences in retention rates between institutions are largely explained by the pre-college academic characteristics of entering freshmen. Colleges that enroll freshmen from the high end of the academic ability range of freshmen will tend to have high freshman-to-sophomore persistence rates. Other institutions that enroll freshmen from the low end of this range will have lower persistence rates. This finding alone should cause any who might seek to measure the quality of academic experiences provided by different colleges to pause. Most of the difference in this measure of performance reflects enrolled student characteristics developed prior to college.

Most, but not all. Here, beyond this very important initial finding, we are interested in identifying and measuring the effects of other external influences on persistence rates. In particular, we have added two to control for certain environmental influences that distract students from their academic pursuit (part-time enrollment) or help focus it (living on-campus). The part-time control had the expected negative influence on student persistence rates, and the living on-campus control had the expected positive influence.

We remain convinced by the work of Tinto and Astin that institutions can design the learning experience of their students to increase their students' chances of success in college beyond what their pre-college academic backgrounds implies. Our indirect approach has attempted to capture that influence where it exists, and notes where it falls short.

We invite others to extend this approach, both for the benefit of institutions and the students they enroll, and for public policy makers who also bear major responsibilities for providing higher education designs and resources that enable students to develop their native potential, in whatever form they possess it.

State Average Actual Minus Predicted
Freshman-to-Sophomore Persistence Rates, 1995



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Ranking By Actual Minus Predicted Retention Rates

	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
1	Arkansas Tech University	AR	0.79	740	0.00	0.23	0.607	0.183
2	Concordia University-Wisconsin	WI	0.88	880	0.50	0.24	0.698	0.182
3	Alverno College	WI	0.87	920	0.10	0.48	0.695	0.175
4	University of Findlay	OH	0.85	840	0.60	0.21	0.680	0.170
5	Lindenwood College	MO	0.88	900	0.60	0.22	0.713	0.167
6	Gwynedd Mercy College	PA	0.85	900	0.40	0.61	0.684	0.166
7	La Rouche College	PA	0.81	810	0.70	0.57	0.645	0.165
8	South Carolina State University	SC	0.78	703	0.90	0.10	0.618	0.162
9	Johnson C. Smith University	NC	0.77	685	0.90	0.03	0.612	0.158
10	Lake Erie College	OH	0.85	890	0.60	0.46	0.693	0.157
11	Pittsburgh State University	KS	0.83	840	0.40	0.14	0.678	0.152
12	St. Thomas Aquinas	NY	0.83	887	0.10	0.44	0.679	0.151
13	New Mexico State University	NM	0.76	740	0.20	0.26	0.610	0.150
14	North Carolina Central University	NC	0.78	745	0.70	0.18	0.631	0.149
15	Colby-Sawyer College	NH	0.85	850	0.90	0.06	0.702	0.148
16	St. Joseph College	CT	0.85	915	0.70	0.56	0.704	0.146
17	Providence College	RI	0.96	1075	0.90	0.27	0.815	0.145
18	Spelman College	GA	0.9	950	0.90	0.04	0.759	0.141
19	University of California-Irvine	CA	0.93	1018	0.70	0.06	0.790	0.140
20	Bowie State University	MD	0.73	696	0.60	0.32	0.593	0.137
21	Holy Family College	PA	0.82	910	0.00	0.52	0.685	0.135
22	Juniata College	PA	0.94	1035	0.90	0.04	0.806	0.134
23	College of Mt. St.Joseph	OH	0.83	915	0.40	0.54	0.697	0.133
24	San Jose State University	CA	0.8	845	0.30	0.33	0.667	0.133
25	Grambling State University	LA	0.75	700	0.80	0.03	0.617	0.133
26	Albany State University	GA	0.73	720	0.00	0.19	0.598	0.132
27	Wheelock College	MA	0.82	855	0.80	0.30	0.688	0.132
28	California State Univ.-Fresno	CA	0.81	851	0.20	0.15	0.679	0.131
29	Jersey City State College	NJ	0.74	760	0.10	0.41	0.610	0.130
30	Clark Atlanta University	GA	0.8	804	0.60	0.03	0.670	0.130
31	Allentown St. Francis de Sales	PA	0.86	945	0.90	0.48	0.731	0.129
32	Fontbonne College	MO	0.76	790	0.50	0.50	0.632	0.128
33	San Francisco State University	CA	0.77	810	0.10	0.33	0.643	0.127
34	College of St. Joseph	VT	0.75	760	0.70	0.46	0.623	0.127
35	Rutgers-Newark	NJ	0.85	950	0.20	0.33	0.723	0.127
36	California State-Stanislaus	CA	0.79	849	0.20	0.39	0.664	0.127
37	Westminster College	PA	0.9	985	0.90	0.05	0.778	0.122
38	San Diego State University	CA	0.8	860	0.30	0.29	0.678	0.122
39	Quinnipiac College	CT	0.88	980	0.70	0.25	0.758	0.122
40	Notre Dame College-Ohio	OH	0.74	765	0.60	0.53	0.619	0.121
41	Marist College	NY	0.9	998	0.90	0.15	0.779	0.121
42	University of St. Thomas	TX	0.88	1000	0.30	0.23	0.760	0.120
43	Duquesne University	PA	0.9	1005	0.80	0.16	0.780	0.120
44	Montclair State University	NJ	0.84	925	0.60	0.33	0.720	0.120
45	Baldwin-Wallace College	OH	0.84	920	0.80	0.37	0.720	0.120
46	California State-Fullerton	CA	0.78	845	0.10	0.35	0.661	0.119
47	Molloy College	NY	0.82	900	0.00	0.14	0.701	0.119
48	Le Moyne College	NY	0.88	975	0.90	0.24	0.761	0.119
49	St. Mary's College	MD	0.87	950	0.90	0.15	0.753	0.117
50	University of Washington	WA	0.91	1045	0.50	0.18	0.793	0.117
51	Oral Roberts University	OK	0.85	905	0.90	0.05	0.733	0.117
52	Georgian Court College	NJ	0.8	870	0.60	0.43	0.684	0.116
53	Ursinas	PA	0.92	1085	0.90	0.55	0.805	0.115
54	Florida A&M University	FL	0.84	943	0.00	0.15	0.725	0.115
55	College of Notre Dame	CA	0.8	865	0.70	0.41	0.685	0.115
56	Hawaii Pacific University	HI	0.81	905	0.10	0.34	0.695	0.115
57	Alabama A&M University	AL	0.7	650	0.80	0.09	0.586	0.114
58	Albertus Magnus College	CT	0.78	831	0.60	0.35	0.667	0.113
59	Bellevue University	NE	0.7	740	0.00	0.52	0.590	0.110
60	California State-Long Beach	CA	0.79	883	0.00	0.33	0.681	0.109
61	Kean College of New Jersey	NJ	0.79	880	0.20	0.37	0.682	0.108
62	Jackson State University	MS	0.71	700	0.40	0.11	0.602	0.108
63	Assumption College	MA	0.84	930	0.90	0.31	0.732	0.108

	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
64	Seton Hall University	NJ	0.84	940	0.60	0.26	0.733	0.107
65	California State-Sacramento	CA	0.8	884	0.30	0.27	0.693	0.107
66	Lesley College	MA	0.79	835	0.90	0.22	0.684	0.106
67	La Salle University	PA	0.87	1005	0.70	0.38	0.765	0.105
68	St. Xavier University	IL	0.76	840	0.20	0.45	0.655	0.105
69	Eastern Illinois University	IL	0.82	880	0.80	0.08	0.715	0.105
70	Teikyo Marycrest University	IA	0.79	880	0.40	0.41	0.685	0.105
71	Upper Iowa University	IA	0.81	900	0.80	0.43	0.706	0.104
72	University of California-Riverside	CA	0.88	1005	0.40	0.04	0.776	0.104
73	Elizabeth City State University	NC	0.74	745	0.70	0.08	0.637	0.103
74	University of Detroit-Mercy	MI	0.8	910	0.40	0.49	0.697	0.103
75	California State Poly-Pomona	CA	0.81	910	0.30	0.27	0.707	0.103
76	Springfield College	MA	0.83	905	0.80	0.09	0.728	0.102
77	St. Vincent College	PA	0.85	950	0.80	0.17	0.749	0.101
78	Washington State University	WA	0.83	900	0.90	0.08	0.729	0.101
79	University of Scranton	PA	0.91	1055	0.80	0.13	0.810	0.100
80	Madonna University	MI	0.74	840	0.10	0.64	0.641	0.099
81	Bethune-Cookman College	FL	0.75	761	0.80	0.02	0.652	0.098
82	St. Peter's College	NJ	0.75	825	0.30	0.37	0.654	0.096
83	Missouri Baptist College	MO	0.66	700	0.10	0.62	0.564	0.096
84	Mount Mary College	WI	0.75	820	0.40	0.36	0.654	0.096
85	Evangel College	MO	0.81	880	0.80	0.07	0.716	0.094
86	Beaver College	PA	0.81	915	0.80	0.39	0.716	0.094
87	California State-Bakersfield	CA	0.76	842	0.20	0.27	0.667	0.093
88	Sacred Heart University	CT	0.85	1005	0.80	0.56	0.757	0.093
89	Russell Sage College	NY	0.85	984	0.80	0.34	0.758	0.092
90	Penn State University	PA	0.93	1095	0.90	0.06	0.839	0.091
91	St. John's University	NY	0.81	930	0.00	0.12	0.719	0.091
92	Florida International Inst.	FL	0.87	1065	0.20	0.47	0.779	0.091
93	Mt. Holyoke College	MA	0.95	1128	0.90	0.02	0.860	0.090
94	College of St. Francis	IL	0.78	920	0.50	0.75	0.690	0.090
95	Coker College	SC	0.81	910	0.70	0.23	0.720	0.090
96	James Madison University	VA	0.92	1081	0.90	0.07	0.830	0.090
97	Tennessee State University	TN	0.77	840	0.80	0.29	0.680	0.090
98	Beloit College	WI	0.94	1118	0.90	0.08	0.850	0.090
99	California State- San Bernardino	CA	0.75	835	0.10	0.24	0.662	0.088
100	University of Memphis	TN	0.82	970	0.10	0.32	0.732	0.088
101	Stonehill College	MA	0.85	990	0.90	0.36	0.763	0.087
102	St. Joseph College	NY	0.77	916	0.00	0.60	0.683	0.087
103	Penn State-Erie, Behrend Col	PA	0.83	963	0.40	0.20	0.744	0.086
104	Kings College	PA	0.84	961	0.90	0.23	0.754	0.086
105	Woodbury University	CA	0.74	795	0.60	0.21	0.655	0.085
106	University of North Carolina	NC	0.94	1125	0.90	0.07	0.855	0.085
107	Indiana University-Bloomington	IN	0.87	1003	0.90	0.10	0.785	0.085
108	University of Wisconsin-Madison	WI	0.91	1080	0.90	0.15	0.825	0.085
109	Rhode Island College	RI	0.76	860	0.30	0.34	0.675	0.085
110	University of San Diego	CA	0.86	985	0.80	0.05	0.775	0.085
111	Tougaloo College	MS	0.72	740	0.70	0.06	0.635	0.085
112	Winstom-Salem State University	NC	0.7	723	0.70	0.24	0.615	0.085
113	Pace University	NY	0.8	950	0.10	0.42	0.715	0.085
114	College of Notre Dame-Maryland	MD	0.8	950	0.80	0.74	0.716	0.085
115	Suffolk University	MA	0.75	850	0.00	0.27	0.666	0.084
116	Point Park College	PA	0.74	840	0.50	0.57	0.656	0.084
117	University of San Francisco	CA	0.85	980	0.70	0.11	0.766	0.084
118	Wagner College	NY	0.84	965	0.60	0.09	0.756	0.084
119	Loras College	IA	0.82	920	0.80	0.09	0.737	0.083
120	Chicago State University	IL	0.66	700	0.00	0.36	0.577	0.083
121	West Chester U. of Pennsylvania	PA	0.83	950	0.80	0.20	0.747	0.083
122	Xavier University	OH	0.85	995	0.80	0.28	0.767	0.083
123	Southern Univ. & A&M College	LA	0.63	600	0.40	0.08	0.548	0.082
124	Curry College	MA	0.72	760	0.80	0.25	0.638	0.082
125	Marquette University	WI	0.87	1010	0.90	0.11	0.788	0.082
126	Trenton State College	NJ	0.92	1105	0.90	0.16	0.839	0.081
127	Southern University-New Orleans	LA	0.61	600	0.00	0.23	0.529	0.081

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	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
128	Nebraska Wesleyn	NE	0.84	970	0.80	0.19	0.759	0.081
129	Gannon University	PA	0.84	985	0.70	0.28	0.759	0.081
130	Xavier University of Louisiana	LA	0.79	885	0.40	0.04	0.709	0.081
131	University of the South	TN	0.95	1145	0.90	0.01	0.870	0.080
132	Appalachian State University	NC	0.85	975	0.90	0.09	0.770	0.080
133	University of S. Carolina-Aiken	SC	0.71	795	0.10	0.40	0.630	0.080
134	Ball State University	IN	0.74	783	0.90	0.13	0.661	0.079
135	Meredith College	NC	0.81	915	0.90	0.19	0.731	0.079
136	University of California-Davis	CA	0.91	1085	0.90	0.09	0.831	0.079
137	Hiram College	OH	0.88	1045	0.90	0.22	0.802	0.078
138	University of Connecticut	CT	0.87	1025	0.90	0.19	0.792	0.078
139	Dordt College	IA	0.82	920	0.90	0.04	0.742	0.078
140	College of Holy Cross	MA	0.97	1185	0.90	0.00	0.893	0.077
141	St. Josephs University	PA	0.85	1010	0.80	0.33	0.773	0.077
142	Loyola Marymount University	CA	0.87	1015	0.90	0.08	0.793	0.077
143	Humboldt State University	CA	0.81	953	0.00	0.10	0.733	0.077
144	Michigan State University	MI	0.85	985	0.90	0.13	0.773	0.077
145	Loyola College	MD	0.91	1095	0.70	0.06	0.833	0.077
146	University of the Pacific	CA	0.86	1000	0.90	0.10	0.783	0.077
147	College of New Rochelle	NY	0.76	830	0.90	0.18	0.684	0.076
148	Villanova University	PA	0.93	1135	0.90	0.18	0.854	0.076
149	North Carolina State U. Raleigh	NC	0.88	1055	0.90	0.27	0.804	0.076
150	Virginia Commonwealth University	VA	0.78	925	0.00	0.32	0.705	0.075
151	Santa Clara University	CA	0.91	1085	0.90	0.03	0.835	0.075
152	Concordia University	IL	0.81	920	0.80	0.12	0.735	0.075
153	University of North Carolina-Charlotte	NC	0.8	930	0.50	0.24	0.726	0.075
154	University of Nevada-Las Vegas	NV	0.73	840	0.20	0.44	0.656	0.074
155	Marywood College	PA	0.77	885	0.30	0.23	0.696	0.074
156	Simmons College	MA	0.83	960	0.80	0.13	0.757	0.073
157	Franklin & Marshall	PA	0.95	1160	0.90	0.02	0.877	0.073
158	California State-Chico	CA	0.8	905	0.80	0.10	0.728	0.072
159	William Paterson Col. of NJ	NJ	0.76	880	0.20	0.27	0.688	0.072
160	Barnard College	NY	0.96	1180	0.90	0.03	0.888	0.072
161	Fairfield University	CT	0.88	1060	0.90	0.25	0.808	0.072
162	Ohio University	OH	0.84	970	0.90	0.07	0.768	0.072
163	Saginaw Valley State University	MI	0.68	740	0.40	0.37	0.609	0.071
164	Eastern Washington University	WA	0.76	865	0.30	0.14	0.690	0.070
165	Allegheny University	PA	0.9	1075	0.90	0.02	0.830	0.070
166	Cedar Crest College	PA	0.8	945	0.90	0.49	0.730	0.070
167	Sonoma State University	CA	0.78	910	0.40	0.26	0.710	0.070
168	Morgan State University	MD	0.75	851	0.30	0.14	0.682	0.068
169	St. Michael's College	VT	0.87	1030	0.90	0.07	0.802	0.068
170	Wofford College	SC	0.89	1060	0.90	0.01	0.822	0.068
171	St. Mary's College of Cal	CA	0.87	1032	0.90	0.08	0.802	0.068
172	SUNY-Stony Brook	NY	0.82	960	0.60	0.11	0.753	0.067
173	California State-Northridge	CA	0.71	809	0.10	0.32	0.643	0.067
174	Youngstown State University	OH	0.72	823	0.10	0.28	0.653	0.067
175	Siena College	NY	0.89	1080	0.90	0.19	0.823	0.067
176	Rosary College	IL	0.76	880	0.50	0.32	0.693	0.067
177	Cal Poly-San Luis Obispo	CA	0.85	1004	0.80	0.10	0.783	0.067
178	Fayetteville State University	NC	0.73	805	0.60	0.16	0.663	0.067
179	Otterbein College	OH	0.82	970	0.90	0.33	0.753	0.067
180	Creighton University	NE	0.83	970	0.90	0.14	0.764	0.066
181	Rockhurst College	MO	0.79	950	0.50	0.45	0.724	0.066
182	Valdosta State University	GA	0.74	828	0.60	0.18	0.675	0.065
183	UCLA	CA	0.94	1160	0.90	0.06	0.875	0.065
184	Coppin State College	MD	0.68	763	0.00	0.29	0.616	0.064
185	University of California-San Diego	CA	0.93	1142	0.90	0.04	0.866	0.064
186	University of Virginia	VA	0.97	1220	0.90	0.10	0.906	0.064
187	Manhattan College	NY	0.84	1000	0.60	0.08	0.777	0.063
188	University of Laverne	CA	0.74	878	0.50	0.57	0.677	0.063
189	Fordham University	NY	0.87	1070	0.70	0.26	0.808	0.062
190	Western Washington University	WA	0.84	985	0.90	0.05	0.778	0.062
191	Iona College	NY	0.75	870	0.40	0.26	0.688	0.062

	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
192	University of Michigan-Dearborn	MI	0.79	985	0.00	0.49	0.728	0.062
193	University of North Florida	FL	0.81	1020	0.00	0.48	0.748	0.062
194	Bloomsburg U. of Pennsylvania	PA	0.84	995	0.90	0.14	0.778	0.062
195	University of South Carolina	SC	0.8	940	0.60	0.16	0.738	0.062
196	Wayne State University	MI	0.74	880	0.40	0.52	0.679	0.061
197	California U. of Pennsylvania	PA	0.71	785	0.50	0.14	0.650	0.060
198	Marymount College-Tarrytown	NY	0.75	875	0.60	0.36	0.690	0.060
199	SUNY-Binghamton	NY	0.93	1155	0.90	0.08	0.871	0.059
200	Loyola University Chicago	IL	0.82	1000	0.70	0.39	0.761	0.059
201	University of Pittsburgh	PA	0.83	995	0.90	0.25	0.772	0.058
202	Aquinas College	MI	0.78	920	0.90	0.38	0.722	0.058
203	St. Louis University	MO	0.82	1020	0.50	0.46	0.763	0.057
204	St. Anselm College	NH	0.84	995	0.90	0.06	0.783	0.057
205	Colby College	ME	0.96	1205	0.90	0.01	0.903	0.057
206	South Dakota State University	SD	0.77	880	0.90	0.15	0.714	0.056
207	Lakeland College	WI	0.71	840	0.70	0.70	0.654	0.056
208	Univ. Tennessee-Chattanooga	TN	0.72	840	0.10	0.25	0.664	0.056
209	Albright College	PA	0.83	1000	0.90	0.26	0.774	0.056
210	Towson State University	MD	0.81	980	0.60	0.27	0.754	0.056
211	Syracuse University	NY	0.89	1095	0.90	0.13	0.835	0.055
212	Rosemount College	PA	0.81	963	0.80	0.19	0.755	0.055
213	Colorado State University	CO	0.84	1011	0.90	0.18	0.785	0.055
214	St. Cloud State University	MN	0.76	880	0.60	0.16	0.705	0.055
215	Rutgers-New Brunswick	NJ	0.9	1115	0.90	0.14	0.845	0.055
216	Clemson University	SC	0.86	1035	0.90	0.06	0.805	0.055
217	Concordia College	MI	0.75	840	0.90	0.08	0.695	0.055
218	University of Wisconsin-Parkside	WI	0.72	840	0.60	0.45	0.666	0.054
219	Lincoln University	PA	0.7	745	0.90	0.02	0.646	0.054
220	University of Wisconsin-Platteville	WI	0.79	920	0.90	0.15	0.736	0.054
221	Alma College	MI	0.87	1050	0.90	0.02	0.816	0.054
222	Southern Connecticut State Univ.	CT	0.72	825	0.60	0.30	0.666	0.054
223	St. John's Univ.	MN	0.83	980	0.90	0.03	0.776	0.054
224	Davidson College	NC	0.96	1210	0.90	0.00	0.906	0.054
225	University of Southern California	CA	0.89	1100	0.80	0.10	0.837	0.053
226	Univerisity of Hawaii-Manoa	HI	0.81	970	0.70	0.18	0.757	0.053
227	SUNY College-Potsdam	NY	0.82	965	0.90	0.05	0.767	0.053
228	Catholic University of America	DC	0.86	1040	0.90	0.08	0.807	0.053
229	Millersville U. of Pennsylvania	PA	0.84	1020	0.90	0.23	0.787	0.053
230	University of Wisconsin-Lacrosse	WI	0.79	920	0.80	0.08	0.737	0.053
231	SUNY Col. Arts & Sci. Geneseo	NY	0.91	1140	0.60	0.03	0.858	0.052
232	Miami University-Oxford	OH	0.9	1110	0.90	0.05	0.848	0.052
233	Trinity College Vermont	VT	0.71	860	0.00	0.50	0.658	0.052
234	Mount St.Mary's College	MD	0.81	950	0.90	0.06	0.758	0.052
235	York College of Penn.	PA	0.81	1010	0.40	0.40	0.758	0.052
236	Gettysburg College	PA	0.91	1125	0.90	0.01	0.858	0.052
237	East Carolina University	NC	0.77	895	0.80	0.16	0.719	0.051
238	Roberts Wesleyan College	NY	0.8	940	0.80	0.07	0.749	0.051
239	Mt. St. Mary's College	CA	0.84	1032	0.60	0.17	0.789	0.051
240	Westmont College	CA	0.84	1000	0.90	0.00	0.789	0.051
241	University of Rochester	NY	0.93	1170	0.90	0.08	0.879	0.051
242	Alcorn State University	MS	0.69	740	0.90	0.08	0.640	0.050
243	University of Michigan	MI	0.94	1185	0.90	0.05	0.890	0.050
244	Thiel College	PA	0.74	848	0.70	0.16	0.690	0.050
245	Houghton College	NY	0.86	1040	0.90	0.03	0.810	0.050
246	St. Francis College	PA	0.8	970	0.80	0.34	0.750	0.050
247	Stillman College	AL	0.64	650	0.80	0.02	0.590	0.050
248	Canisius College	NY	0.79	945	0.50	0.13	0.740	0.050
249	U. of Maryland-Baltimore County	MD	0.85	1065	0.60	0.29	0.801	0.049
250	Virginia State University	VA	0.65	687	0.60	0.10	0.601	0.049
251	Valley City State	ND	0.67	740	0.40	0.17	0.621	0.049
252	Colorado College	CO	0.93	1165	0.90	0.00	0.881	0.049
253	U. of North Carolina-Wilmington	NC	0.78	930	0.70	0.23	0.731	0.049
254	Morehouse College	GA	0.84	1015	0.80	0.06	0.791	0.049
255	Dallas Baptist University	TX	0.72	880	0.40	0.64	0.672	0.048

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256	Augsburg College	MN	0.75	875	0.80	0.26	0.702	0.048
257	Longwood College	VA	0.81	955	0.90	0.04	0.762	0.048
258	Goshen College	IN	0.83	1015	0.60	0.13	0.782	0.048
259	Northwestern University	IL	0.96	1240	0.90	0.19	0.912	0.048
260	University of Delaware	DE	0.86	1065	0.90	0.23	0.812	0.048
261	Univ. of California-Santa Barbara	CA	0.86	1050	0.80	0.04	0.812	0.048
262	George Washington University	DC	0.89	1120	0.90	0.24	0.842	0.048
263	Grand Valley State University	MI	0.77	920	0.60	0.23	0.723	0.047
264	Northwest Nazarene College	ID	0.74	840	0.80	0.07	0.693	0.047
265	Univ. of Pittsburgh-Johnstown	PA	0.81	980	0.70	0.16	0.763	0.047
266	Univ. of Illinois-Urbana-Champaign	IL	0.91	1151	0.70	0.08	0.864	0.046
267	St. Mary of the Woods	IN	0.68	800	0.90	0.75	0.634	0.046
268	E. Mennonite University	VA	0.79	925	0.90	0.06	0.744	0.046
269	Middle Tennessee State Univ	TN	0.72	840	0.30	0.17	0.674	0.046
270	Depaul University	IL	0.83	1045	0.60	0.38	0.784	0.046
271	U. of North Carolina-Pembroke	NC	0.71	820	0.40	0.19	0.664	0.046
272	Boston College	MA	0.94	1200	0.90	0.11	0.894	0.046
273	Rochester Inst. of Technology	NY	0.85	1055	0.90	0.26	0.805	0.045
274	Texas Women's University	TX	0.67	760	0.50	0.34	0.625	0.045
275	St. Bonaventure University	NY	0.83	1000	0.90	0.07	0.785	0.045
276	Mary Baldwin College	VA	0.78	933	0.90	0.28	0.736	0.044
277	Susquehanna University	PA	0.83	1005	0.90	0.11	0.786	0.044
278	Iowa State University	IA	0.82	995	0.70	0.08	0.776	0.044
279	Univ. Of Maine-Fort Kent	ME	0.7	830	0.10	0.27	0.657	0.043
280	Marymount University	VA	0.75	910	0.70	0.45	0.707	0.043
281	University of St. Thomas	MN	0.83	1035	0.50	0.18	0.788	0.042
282	University of New England	ME	0.75	880	0.70	0.16	0.708	0.042
283	Chadron State College	NE	0.73	840	0.90	0.21	0.688	0.042
284	Elon College	NC	0.78	915	0.90	0.07	0.738	0.042
285	Manhattanville College	NY	0.86	1068	0.90	0.16	0.818	0.042
286	Lafayette College	PA	0.92	1170	0.90	0.10	0.878	0.042
287	Presbyterian College	SC	0.88	1090	0.90	0.02	0.838	0.042
288	Rollins College	FL	0.85	1075	0.90	0.38	0.809	0.041
289	Bucknell University	PA	0.93	1180	0.90	0.01	0.889	0.041
290	Georgia Southwestern College	GA	0.7	815	0.40	0.23	0.659	0.041
291	Elmira College	NY	0.81	1000	0.90	0.34	0.769	0.041
292	Middlebury	VT	0.96	1235	0.90	0.01	0.920	0.040
293	Valparaiso University	IN	0.87	1080	0.90	0.07	0.830	0.040
294	Trinity College	CT	0.92	1175	0.90	0.12	0.880	0.040
295	Franciscan U. of Steubenville	OH	0.81	980	0.90	0.14	0.770	0.040
296	SUNY-Buffalo	NY	0.86	1100	0.40	0.20	0.820	0.040
297	Trinity Christian College	IL	0.75	880	0.60	0.07	0.710	0.040
298	West Virginia University	WV	0.77	910	0.70	0.06	0.730	0.040
299	Washington University	MO	0.94	1220	0.90	0.20	0.900	0.040
300	Skidmore College	NY	0.89	1120	0.90	0.10	0.850	0.040
301	Luther College	IA	0.88	1095	0.90	0.03	0.841	0.039
302	Washington & Jefferson	PA	0.88	1105	0.90	0.12	0.841	0.039
303	College of the Ozarks	MO	0.76	880	0.90	0.02	0.721	0.039
304	Georgetown University	DC	0.95	1230	0.80	0.06	0.911	0.039
305	Univ. of Pittsburgh-Greensburg	PA	0.72	870	0.20	0.28	0.682	0.038
306	University of Alabama	AL	0.8	970	0.70	0.09	0.762	0.038
307	Westfield State College	MA	0.73	850	0.90	0.23	0.692	0.038
308	Oregon State University	OR	0.8	959	0.90	0.07	0.762	0.038
309	College of St. Rose	NY	0.81	1016	0.70	0.35	0.772	0.038
310	Hope College	MI	0.86	1070	0.90	0.10	0.823	0.037
311	Cedarville College	OH	0.82	990	0.90	0.02	0.783	0.037
312	Mary Washington College	VA	0.86	1080	0.90	0.19	0.823	0.037
313	University of Portland	OR	0.79	947	0.80	0.07	0.753	0.037
314	Wheaton College	IL	0.92	1170	0.90	0.02	0.883	0.037
315	University of Minnesota-Duluth	MN	0.76	920	0.90	0.37	0.723	0.037
316	Texas A&M University	TX	0.85	1065	0.60	0.07	0.813	0.037
317	Northern Kentucky University	KY	0.71	840	0.70	0.36	0.674	0.036
318	Univ. of Maryland-Eastern Shore	MD	0.7	793	0.70	0.08	0.664	0.036
319	Univ. of Maryland-College Park	MD	0.85	1080	0.50	0.16	0.814	0.036

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320	University of New Hampshire	NH	0.84	1040	0.90	0.12	0.805	0.035
321	University of Richmond	VA	0.92	1195	0.90	0.23	0.885	0.035
322	University of Hartford	CT	0.76	920	0.90	0.34	0.725	0.035
323	Bates College	ME	0.95	1225	0.90	0.00	0.915	0.035
324	Virginia Tech	VA	0.87	1085	0.90	0.03	0.835	0.035
325	Emory & Henry College	VA	0.81	980	0.90	0.05	0.775	0.035
326	Univ.of Minnesota-Twin Cities	MN	0.82	1070	0.60	0.60	0.785	0.035
327	St. Lawrence	NY	0.85	1050	0.90	0.03	0.815	0.035
328	Univ.California-Berkeley	CA	0.94	1235	0.50	0.07	0.906	0.034
329	Ashland University	OH	0.74	880	0.80	0.24	0.706	0.034
330	Florida State University	FL	0.86	1085	0.80	0.14	0.826	0.034
331	University of North Dakota	ND	0.77	950	0.30	0.16	0.736	0.034
332	Taylor University	IN	0.87	1088	0.90	0.04	0.836	0.034
333	Walsh University	OH	0.72	880	0.40	0.39	0.686	0.034
334	Muhlenberg College	PA	0.91	1176	0.90	0.19	0.876	0.034
335	Augustana College	IL	0.85	1050	0.90	0.01	0.817	0.033
336	St. Josephs College	ME	0.73	920	0.90	0.82	0.697	0.033
337	Clarion University of Penn	PA	0.76	920	0.50	0.12	0.727	0.033
338	Shippensburg U. of Pennsylvania	PA	0.8	970	0.80	0.05	0.767	0.033
339	University of Notre Dame	IN	0.97	1265	0.90	0.00	0.937	0.033
340	Western New England College	MA	0.71	850	0.80	0.44	0.677	0.033
341	LeMoyne-Owen College	TN	0.6	650	0.10	0.09	0.567	0.033
342	Western Michigan University	MI	0.79	970	0.80	0.21	0.758	0.032
343	John Carrol University	OH	0.86	1085	0.80	0.11	0.828	0.032
344	University of Denver	CO	0.81	1015	0.70	0.24	0.778	0.032
345	College of Wooster	OH	0.85	1055	0.90	0.02	0.819	0.031
346	Lehigh University	PA	0.9	1145	0.90	0.02	0.869	0.031
347	Eastern College	PA	0.77	940	0.80	0.24	0.739	0.031
348	Capital University	OH	0.77	960	0.80	0.43	0.739	0.031
349	Willamette University	OR	0.88	1115	0.90	0.07	0.849	0.031
350	St. Mary's Univ. of San Antonio	TX	0.77	935	0.70	0.14	0.739	0.031
351	Gustavus-Adolphus	MN	0.88	1110	0.90	0.02	0.850	0.031
352	Fairleigh Dickinson Univ.	NJ	0.74	920	0.60	0.46	0.710	0.030
353	Samford University	AL	0.82	1030	0.60	0.14	0.790	0.030
354	University of Mississippi	MS	0.77	920	0.90	0.08	0.740	0.030
355	University of Vermont	VT	0.83	1040	0.90	0.19	0.801	0.029
356	St. Norberts College	WI	0.85	1060	0.90	0.03	0.821	0.029
357	Haverford College	PA	0.98	1290	0.90	0.00	0.951	0.029
358	Pacific Lutheran University	WA	0.8	978	0.90	0.10	0.771	0.029
359	Notre Dame College	NH	0.7	845	0.60	0.40	0.671	0.029
360	Ithaca College	NY	0.83	1025	0.90	0.03	0.801	0.029
361	University of Evansville	IN	0.82	1022	0.90	0.17	0.792	0.028
362	University of Louisville	KY	0.69	840	0.30	0.38	0.662	0.028
363	College of Charleston	SC	0.8	1000	0.60	0.16	0.772	0.028
364	Monmouth College	IL	0.8	970	0.90	0.01	0.772	0.028
365	Lamar University	TX	0.64	765	0.10	0.42	0.612	0.028
366	Ohio State Univ.-Columbus	OH	0.8	1005	0.50	0.15	0.773	0.027
367	Northeastern Illinois University	IL	0.62	740	0.00	0.47	0.593	0.027
368	University of Northern Iowa	IA	0.81	1010	0.80	0.16	0.783	0.027
369	Doanne College	NE	0.78	970	0.80	0.29	0.753	0.027
370	Central Connecticut State Univ.	CT	0.71	865	0.60	0.39	0.683	0.027
371	University of Florida	FL	0.89	1145	0.90	0.12	0.863	0.027
372	Univ. of Wisconsin-Oskosh	WI	0.74	880	0.90	0.15	0.714	0.026
373	Baker University	KS	0.78	970	0.90	0.32	0.754	0.026
374	University of Kansas	KS	0.78	970	0.40	0.09	0.754	0.026
375	Coe College	IA	0.82	1025	0.90	0.16	0.794	0.026
376	University of Georgia	GA	0.85	1080	0.80	0.12	0.824	0.026
377	Merrimack Coll.	MA	0.77	975	0.50	0.34	0.745	0.025
378	Depauw University	IN	0.9	1155	0.90	0.01	0.875	0.025
379	Univ. of Mass.-Dartmouth	MA	0.74	912	0.60	0.29	0.715	0.025
380	Millsaps College	MS	0.85	1075	0.90	0.10	0.825	0.025
381	Judson College	IL	0.71	840	0.70	0.16	0.685	0.025
382	Felician College	NJ	0.67	845	0.00	0.57	0.645	0.025
383	Nazareth College of Rochester	NY	0.82	1042	0.80	0.25	0.795	0.025

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	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
384	Tufts University	MA	0.97	1280	0.90	0.00	0.946	0.024
385	Furman	SC	0.88	1125	0.90	0.06	0.856	0.024
386	Occidental	CA	0.88	1120	0.90	0.01	0.856	0.024
387	Caldwell College	NJ	0.73	925	0.50	0.53	0.706	0.024
388	Oakland University	MI	0.73	920	0.30	0.39	0.706	0.024
389	Pepperdine University	CA	0.83	1050	0.90	0.19	0.806	0.024
390	St. Olaf	MN	0.87	1105	0.90	0.03	0.846	0.024
391	University Charleston	WV	0.72	910	0.30	0.46	0.696	0.024
392	Southern Methodist University	TX	0.84	1055	0.90	0.06	0.816	0.024
393	Elizabethan College	PA	0.82	1030	0.90	0.16	0.797	0.023
394	Dickinson	PA	0.87	1105	0.90	0.02	0.847	0.023
395	University of Akron	OH	0.72	911	0.20	0.41	0.697	0.023
396	Kent State Univ.	OH	0.73	875	0.80	0.17	0.707	0.023
397	Randolph-Macon	VA	0.81	1000	0.90	0.04	0.787	0.023
398	Bowdoin College	ME	0.94	1230	0.90	0.01	0.917	0.023
399	Wheaton College	MA	0.85	1070	0.90	0.02	0.827	0.023
400	College of William & Mary	VA	0.93	1215	0.90	0.03	0.908	0.023
401	Bennett College	NC	0.67	749	0.90	0.03	0.648	0.022
402	Anderson University	IN	0.74	886	0.90	0.14	0.718	0.022
403	College of St. Mary	NE	0.68	840	0.60	0.59	0.658	0.022
404	University of Iowa	IA	0.83	1050	0.90	0.16	0.808	0.022
405	U. of North Carolina-Grennsboro	NC	0.77	955	0.80	0.23	0.748	0.022
406	West Maryland College	MD	0.8	990	0.90	0.09	0.778	0.022
407	Avila College	MO	0.67	814	0.50	0.44	0.649	0.021
408	North Georgia College	GA	0.74	915	0.40	0.16	0.719	0.021
409	Univ. of Missouri-Columbia	MO	0.83	1045	0.90	0.09	0.809	0.021
410	Mankota State University	MN	0.73	880	0.80	0.18	0.709	0.021
411	Illinois Wesleyn	IL	0.93	1215	0.90	0.00	0.909	0.021
412	Hood College	MD	0.81	1035	0.90	0.33	0.790	0.020
413	University of Dayton	OH	0.84	1065	0.90	0.10	0.820	0.020
414	D'Youville College	NY	0.76	950	0.60	0.23	0.740	0.020
415	Drury College	MO	0.8	1050	0.60	0.50	0.780	0.020
416	Knox College	IL	0.85	1075	0.90	0.02	0.830	0.020
417	Univ. of Texas-Austin	TX	0.86	1130	0.40	0.14	0.840	0.020
418	Hamilton College	NY	0.92	1200	0.90	0.01	0.900	0.020
419	Erskine College	SC	0.81	1005	0.90	0.03	0.790	0.020
420	Puget Sound	WA	0.85	1078	0.90	0.04	0.830	0.020
421	University of Nevada-Reno	NV	0.72	915	0.10	0.34	0.701	0.019
422	Kenyon College	OH	0.9	1165	0.90	0.01	0.881	0.019
423	Barber Scotia College	NC	0.55	560	0.50	0.03	0.531	0.019
424	Gonzaga University	WA	0.83	1050	0.90	0.10	0.811	0.019
425	Bluefield College	VA	0.67	792	0.50	0.19	0.651	0.019
426	Univ. of California-Santa Cruz	CA	0.83	1070	0.40	0.06	0.811	0.019
427	Southeastern Oklahoma State	OK	0.67	790	0.50	0.17	0.651	0.019
428	Baylor University	TX	0.83	1045	0.90	0.05	0.811	0.019
429	Western Carolina University	NC	0.72	860	0.80	0.12	0.701	0.019
430	Messiah College	PA	0.85	1078	0.90	0.02	0.832	0.018
431	Univ. of Nebraska-Kearney	NE	0.72	880	0.50	0.17	0.702	0.018
432	Mount Vernon Nazarene	OH	0.73	880	0.70	0.09	0.712	0.018
433	Fitchburg State College	MA	0.69	850	0.40	0.35	0.672	0.018
434	Salem	NC	0.79	1000	0.90	0.30	0.772	0.018
435	Alvernia College	PA	0.7	850	0.80	0.36	0.682	0.018
436	Univ. of Wisconsin-Green Bay	WI	0.74	920	0.60	0.25	0.722	0.018
437	Union College	NY	0.92	1210	0.90	0.07	0.902	0.018
438	Univ. of Southern Mississippi	MS	0.73	880	0.80	0.12	0.713	0.017
439	Mansfield Univ. of Penn	PA	0.73	875	0.80	0.07	0.713	0.017
440	Troy State University	AL	0.72	880	0.50	0.15	0.703	0.017
441	Grinnell College	IA	0.95	1260	0.90	0.02	0.933	0.017
442	Widener University	PA	0.75	960	0.60	0.44	0.733	0.017
443	Indiana University Northwest	IN	0.64	795	0.00	0.47	0.623	0.017
444	University of Wisconsin-Stout	WI	0.71	840	0.90	0.11	0.694	0.016
445	University of Cincinnati	OH	0.76	985	0.20	0.31	0.744	0.016
446	Rivier College	NH	0.67	850	0.40	0.65	0.654	0.016
447	Kutztown Univ.of Penn	PA	0.76	957	0.40	0.13	0.744	0.016

	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
448	Rider University	NJ	0.72	890	0.70	0.31	0.704	0.016
449	St. Ambrose University	IA	0.72	880	0.80	0.26	0.704	0.016
450	Bethel College	MN	0.79	985	0.80	0.06	0.775	0.015
451	East Stroudsberg Un. of Pennsylvania	PA	0.74	905	0.80	0.15	0.725	0.015
452	North Carolina A&T State Univ	NC	0.75	915	0.90	0.12	0.735	0.015
453	Univ. of Tennessee-Knoxville	TN	0.79	995	0.80	0.15	0.775	0.015
454	Drew University	NJ	0.89	1159	0.90	0.05	0.875	0.015
455	Hampton University	VA	0.77	945	0.90	0.06	0.755	0.015
456	Univ. of Nebraska-Lincoln	NE	0.76	952	0.60	0.15	0.746	0.014
457	Wesley College	DE	0.66	780	0.80	0.31	0.646	0.014
458	University of Oregon	OR	0.8	1020	0.60	0.11	0.786	0.014
459	Keuka College	NY	0.75	915	0.90	0.10	0.736	0.014
460	Clark University	MA	0.83	1075	0.60	0.12	0.816	0.014
461	U. of Maine-Farmington	ME	0.72	910	0.00	0.15	0.706	0.014
462	Bowling Green State Univ	OH	0.77	950	0.90	0.08	0.757	0.013
463	Atlantic Union College	MA	0.68	840	0.60	0.43	0.667	0.013
464	Viterbo College	WI	0.76	970	0.60	0.30	0.747	0.013
465	Central Michigan University	MI	0.73	880	0.90	0.09	0.717	0.013
466	Grove City College	PA	0.87	1128	0.80	0.01	0.857	0.013
467	Vanderbilt University	TN	0.91	1195	0.90	0.01	0.898	0.012
468	Gordon College	MA	0.8	1000	0.90	0.03	0.788	0.012
469	SUNY Col. Arts & Sci. Brockport	NY	0.76	950	0.80	0.19	0.748	0.012
470	Worcester State College	MA	0.67	832	0.40	0.42	0.658	0.012
471	Univ. of Wisconsin-Stevens Point	WI	0.75	920	0.90	0.12	0.738	0.012
472	Salem-Teikyo University	WV	0.74	890	0.90	0.00	0.728	0.012
473	University of Rhode Island	RI	0.76	950	0.90	0.22	0.749	0.011
474	Colgate University	NY	0.94	1250	0.90	0.00	0.929	0.011
475	University of Montevallo	AL	0.72	880	0.70	0.14	0.709	0.011
476	Niagara University	NY	0.75	928	0.80	0.13	0.739	0.011
477	SUNY-Plattsburgh	NY	0.79	990	0.90	0.08	0.779	0.011
478	Fresno Pacific College	CA	0.79	995	0.80	0.08	0.779	0.011
479	Case Western Reserve	OH	0.91	1220	0.80	0.17	0.899	0.011
480	Briar Cliff College	IA	0.69	840	0.90	0.35	0.680	0.010
481	Midland Lutheran College	NE	0.72	880	0.60	0.08	0.710	0.010
482	Keene State College	NH	0.73	893	0.90	0.17	0.720	0.010
483	Wilmington College	OH	0.69	840	0.80	0.30	0.680	0.010
484	Ramapo College of New Jersey	NJ	0.74	950	0.60	0.40	0.730	0.010
485	Concordia College	NE	0.78	970	0.90	0.04	0.770	0.010
486	Butler University	IN	0.82	1045	0.90	0.07	0.810	0.010
487	New York University	NY	0.86	1145	0.60	0.20	0.850	0.010
488	Spalding University	KY	0.67	840	0.10	0.31	0.660	0.010
489	Emerson College	MA	0.79	1002	0.90	0.17	0.780	0.010
490	University of Pennsylvania	PA	0.95	1290	0.90	0.18	0.941	0.009
491	Barry University	FL	0.7	915	0.30	0.60	0.691	0.009
492	Rutgers-Camden	NJ	0.79	1045	0.30	0.30	0.781	0.009
493	Auburn University	AL	0.82	1077	0.30	0.09	0.811	0.009
494	Christopher Newport Univ	VA	0.7	898	0.20	0.38	0.691	0.009
495	Davis & Elkins College	WV	0.66	790	0.50	0.17	0.651	0.009
496	MidAmerican Nazarene College	KS	0.72	880	0.80	0.14	0.711	0.009
497	Linfield College	OR	0.79	1020	0.90	0.32	0.782	0.008
498	Emory University	GA	0.91	1205	0.90	0.03	0.902	0.008
499	Radford University	VA	0.73	885	0.90	0.05	0.722	0.008
500	University of South Alabama	AL	0.72	920	0.30	0.28	0.712	0.008
501	Chapman University	CA	0.74	921	0.70	0.13	0.732	0.008
502	Hastings College	NE	0.75	920	0.90	0.04	0.742	0.008
503	Muskingum College	OH	0.75	920	0.90	0.04	0.742	0.008
504	Fairmont State College	WV	0.59	700	0.10	0.31	0.582	0.008
505	Mercer University	GA	0.77	980	0.90	0.27	0.762	0.008
506	University of Arizona	AZ	0.77	985	0.60	0.18	0.762	0.008
507	North Park College	IL	0.8	1025	0.70	0.09	0.793	0.007
508	Cornell University	NY	0.95	1275	0.90	0.00	0.943	0.007
509	Mississippi State Univ.	MS	0.77	970	0.80	0.12	0.763	0.007
510	Olivet Nazarene University	IL	0.72	880	0.90	0.16	0.713	0.007
511	Universityof Illinois-Chicago	IL	0.7	880	0.20	0.18	0.693	0.007

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512	Clarke College	IA	0.78	1010	0.90	0.37	0.773	0.007
513	Pomona College	CA	0.98	1330	0.90	0.00	0.973	0.007
514	Wright State Univ.	OH	0.67	820	0.50	0.25	0.664	0.006
515	American University	DC	0.86	1133	0.90	0.17	0.854	0.006
516	Drexel University	PA	0.78	1010	0.70	0.27	0.774	0.006
517	Brown University	RI	0.96	1300	0.90	0.05	0.954	0.006
518	Pacific Union College	CA	0.72	880	0.80	0.10	0.714	0.006
519	Campbell University	NC	0.73	915	0.70	0.21	0.724	0.006
520	Castleton State College	VT	0.71	874	0.70	0.16	0.704	0.006
521	Mercyhurst Coll.	PA	0.77	973	0.90	0.17	0.764	0.006
522	Geneva College	PA	0.76	960	0.80	0.17	0.754	0.006
523	Whitman College	WA	0.86	1120	0.90	0.03	0.854	0.006
524	East Tennessee State University	TN	0.69	880	0.10	0.28	0.685	0.005
525	Green Mountain College	VT	0.74	905	0.90	0.03	0.735	0.005
526	Hollins College	VA	0.79	1000	0.90	0.08	0.785	0.005
527	Bryn Mawr	PA	0.93	1250	0.90	0.07	0.925	0.005
528	Univ. of Wisconsin-Whitewater	WI	0.74	920	0.90	0.17	0.735	0.005
529	Georgia College	GA	0.72	916	0.40	0.24	0.715	0.005
530	Wabash College	IN	0.85	1100	0.90	0.00	0.845	0.005
531	Texas Christian University	TX	0.79	1005	0.90	0.11	0.786	0.004
532	Plymouth State College	NH	0.72	880	0.90	0.11	0.716	0.004
533	Marian College of Fond du Lac	WI	0.72	900	0.60	0.16	0.716	0.004
534	Columbia University	NY	0.95	1300	0.90	0.18	0.946	0.004
535	La Sierra University	CA	0.71	895	0.50	0.23	0.707	0.003
536	John Brown University	AR	0.78	993	0.80	0.10	0.777	0.003
537	University of Arkansas-Fayettville	AR	0.73	920	0.50	0.12	0.727	0.003
538	Friends University	KS	0.62	740	0.10	0.10	0.617	0.003
539	Monmouth University	NJ	0.73	930	0.80	0.35	0.727	0.003
540	Frostberg State University	MD	0.73	905	0.80	0.10	0.728	0.002
541	Dartmouth University	NH	0.97	1320	0.90	0.00	0.968	0.002
542	Vassar College	NY	0.92	1235	0.90	0.04	0.918	0.002
543	Wartburg College	IA	0.81	1040	0.90	0.06	0.808	0.002
544	Michigan Technological Univ.	MI	0.84	1100	0.80	0.07	0.838	0.002
545	Texas Tech	TX	0.75	945	0.80	0.13	0.748	0.002
546	Wellesley	MA	0.92	1240	0.90	0.08	0.919	0.001
547	Indiana Univ. of Pennsylvania	PA	0.76	965	0.70	0.10	0.759	0.001
548	Smith	MA	0.88	1165	0.90	0.04	0.879	0.001
549	Salem State College	MA	0.68	875	0.20	0.37	0.679	0.001
550	NC-Asheville	NC	0.79	1045	0.70	0.34	0.789	0.001
551	Washington College	MD	0.81	1040	0.90	0.04	0.809	0.001
552	Hofstra University	NY	0.8	1055	0.50	0.17	0.799	0.001
553	Calvin College	MI	0.83	1075	0.90	0.03	0.829	0.001
554	University of Alabama-Birmingham	AL	0.68	880	0.20	0.41	0.680	0.000
555	Christian Brothers University	TN	0.77	1015	0.40	0.25	0.770	0.000
556	Carleton College	MN	0.94	1270	0.90	0.00	0.940	0.000
557	Roger Williams University	RI	0.7	890	0.80	0.43	0.700	0.000
558	Yeshiva University	NY	0.88	1165	0.90	0.02	0.880	0.000
559	Delta State University	MS	0.68	840	0.60	0.20	0.680	0.000
560	Tabor College	KS	0.74	920	0.90	0.07	0.741	-0.001
561	Salisbury State University	MD	0.8	1045	0.80	0.19	0.801	-0.001
562	Austin College	TX	0.8	1022	0.90	0.01	0.801	-0.001
563	Tuskegee University	AL	0.73	900	0.90	0.04	0.731	-0.001
564	Yale University	CT	0.98	1345	0.90	0.01	0.981	-0.001
565	Northeast Louisiana Univ.	LA	0.65	790	0.50	0.17	0.651	-0.001
566	Indiana U.-Purdue U.-Indianapolis	IN	0.62	795	0.10	0.54	0.622	-0.002
567	Colorado School of Mines	CO	0.86	1165	0.70	0.24	0.862	-0.002
568	Georgia Southern University	GA	0.69	844	0.70	0.08	0.692	-0.002
569	Swarthmore College	PA	0.96	1310	0.90	0.00	0.962	-0.002
570	Tulane University	LA	0.86	1155	0.90	0.23	0.862	-0.002
571	Univ. of Wisconsin-Eau Claire	WI	0.79	1030	0.70	0.14	0.792	-0.002
572	Drake University	IA	0.79	1025	0.90	0.18	0.793	-0.003
573	Southern Illinois-Edwardsville	IL	0.69	880	0.30	0.23	0.693	-0.003
574	University of Oklahoma	OK	0.78	1010	0.80	0.16	0.783	-0.003
575	Washington & Lee	VA	0.93	1258	0.90	0.00	0.933	-0.003

	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
576	Mount Union College	OH	0.75	945	0.90	0.09	0.753	-0.003
577	Connecticut College	CT	0.9	1217	0.90	0.12	0.903	-0.003
578	Tusculum College	TN	0.68	825	0.70	0.05	0.683	-0.003
579	Austin Peay State Univ.	TN	0.68	880	0.30	0.39	0.683	-0.003
580	Hartwick College	NY	0.77	975	0.90	0.03	0.774	-0.004
581	Georgia State University	GA	0.69	890	0.80	0.54	0.694	-0.004
582	University of Idaho	ID	0.76	970	0.90	0.15	0.764	-0.004
583	Winthrop University	SC	0.76	974	0.80	0.14	0.764	-0.004
584	Wilkes University	PA	0.71	910	0.50	0.24	0.714	-0.004
585	Wilson College	PA	0.73	985	0.80	0.75	0.734	-0.004
586	Duke University	NC	0.96	1315	0.90	0.01	0.964	-0.004
587	Earlham College	IN	0.84	1100	0.90	0.01	0.845	-0.005
588	Talladega College	AL	0.64	750	0.90	0.09	0.645	-0.005
589	Johns Hopkins University	MD	0.94	1315	0.90	0.35	0.945	-0.005
590	Cleveland State University	OH	0.64	815	0.10	0.34	0.645	-0.005
591	Philadelphia Col. of Textiles/Sci	PA	0.7	898	0.70	0.38	0.705	-0.005
592	Univ. of Massachusetts-Amherst	MA	0.77	985	0.90	0.10	0.775	-0.005
593	Columbia College	SC	0.69	857	0.80	0.20	0.695	-0.005
594	Univ. of Maine-Orono	ME	0.76	980	0.90	0.22	0.765	-0.005
595	New England College	NH	0.68	840	0.90	0.24	0.686	-0.006
596	Mars Hill College	NC	0.69	850	0.90	0.16	0.696	-0.006
597	Hannibal-LaGrange College	MO	0.68	880	0.30	0.34	0.686	-0.006
598	Morehead State University	KY	0.65	790	0.60	0.13	0.656	-0.006
599	Southwest Baptist University	MO	0.69	880	0.70	0.35	0.697	-0.007
600	Simpson College	IA	0.79	1050	0.90	0.35	0.797	-0.007
601	University of New Mexico	NM	0.71	920	0.50	0.29	0.717	-0.007
602	Wake Forest University	NC	0.92	1250	0.90	0.03	0.927	-0.007
603	Truman State University	MO	0.83	1090	0.90	0.04	0.837	-0.007
604	Florida Atlantic University	FL	0.76	1030	0.50	0.48	0.767	-0.007
605	Emporia State University	KS	0.68	840	0.70	0.12	0.688	-0.008
606	Brandeis University	MA	0.9	1215	0.90	0.02	0.908	-0.008
607	Indiana University Southeast	IN	0.62	806	0.00	0.49	0.628	-0.008
608	University of Texas-El Paso	TX	0.62	790	0.00	0.33	0.629	-0.009
609	Illinois State University	IL	0.73	920	0.90	0.10	0.739	-0.009
610	Kalamazoo College	MI	0.85	1125	0.90	0.00	0.859	-0.009
611	St. John Fisher College	NY	0.76	999	0.80	0.29	0.769	-0.009
612	Polytechnic University	NY	0.79	1070	0.10	0.13	0.799	-0.009
613	North Dakota State University	ND	0.75	970	0.80	0.18	0.759	-0.009
614	St. Thomas University	FL	0.63	800	0.30	0.38	0.639	-0.009
615	SUNY-Albany	NY	0.85	1150	0.90	0.23	0.860	-0.010
616	Lander University	SC	0.68	858	0.40	0.12	0.690	-0.010
617	East Texas State State U.	TX	0.69	880	0.60	0.25	0.700	-0.010
618	Worcester Polytechnic Inst.	MA	0.89	1200	0.90	0.02	0.900	-0.010
619	Western Illinois University	IL	0.68	840	0.80	0.13	0.690	-0.010
620	Eastern Kentucky University	KY	0.65	790	0.90	0.21	0.660	-0.010
621	Claremont-Mckeena	CA	0.93	1270	0.90	0.00	0.940	-0.010
622	Maryville Univ. of St. Louis	MO	0.76	1050	0.50	0.62	0.770	-0.010
623	Lycoming College	PA	0.78	1015	0.80	0.08	0.790	-0.010
624	Eastern Connecticut State Univ	CT	0.7	900	0.80	0.35	0.710	-0.010
625	Cardinal Stritch College	WI	0.69	880	0.40	0.14	0.701	-0.011
626	Seattle Pacific University	WA	0.75	983	0.80	0.28	0.761	-0.011
627	Ohio Northern University	OH	0.76	970	0.90	0.03	0.771	-0.011
628	California Lutheran University	CA	0.77	1015	0.80	0.24	0.781	-0.011
629	Lenoir-Rhyne College	NC	0.79	1040	0.80	0.13	0.801	-0.011
630	Sweet Briar College	VA	0.78	1010	0.90	0.06	0.791	-0.011
631	Bemidji State University	MN	0.69	880	0.60	0.22	0.701	-0.011
632	Bellarmine College	KY	0.75	1020	0.60	0.53	0.761	-0.011
633	Slippery Rock U. of Penn.	PA	0.74	947	0.90	0.14	0.752	-0.012
634	Dowling College	NY	0.62	825	0.10	0.66	0.632	-0.012
635	Azusa Pacific University	CA	0.73	920	0.90	0.05	0.742	-0.012
636	Brescia College	KY	0.68	880	0.50	0.34	0.692	-0.012
637	Stanford University	CA	0.97	1345	0.90	0.00	0.982	-0.012
638	Walla Walla College	WA	0.75	970	0.70	0.09	0.762	-0.012
639	Biola University	CA	0.76	983	0.70	0.04	0.772	-0.012

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	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
640	Siena Heights College	MI	0.65	840	0.60	0.51	0.662	-0.012
641	Mount Senario College	WI	0.6	740	0.80	0.50	0.612	-0.012
642	Boston University	MA	0.85	1150	0.90	0.18	0.862	-0.012
643	Milikin University	IL	0.78	1010	0.90	0.04	0.793	-0.013
644	Howard University	DC	0.69	878	0.40	0.09	0.703	-0.013
645	Touro College	NY	0.78	1050	0.10	0.05	0.793	-0.013
646	Kansas State University	KS	0.75	970	0.80	0.12	0.763	-0.013
647	Northern Michigan University	MI	0.67	840	0.70	0.20	0.683	-0.013
648	Indiana State University	IN	0.66	820	0.70	0.18	0.673	-0.013
649	Louisina Tech University	LA	0.69	880	0.60	0.19	0.703	-0.013
650	St. Mary College	KS	0.72	970	0.70	0.58	0.733	-0.013
651	Sarah Lawrence	NY	0.89	1215	0.90	0.10	0.903	-0.013
652	Amherst	MA	0.96	1330	0.90	0.00	0.973	-0.013
653	Southeastern Louisiana Univ.	LA	0.63	790	0.20	0.17	0.643	-0.013
654	Huntington College	IN	0.72	920	0.70	0.10	0.733	-0.013
655	Harding University	AR	0.76	977	0.90	0.05	0.774	-0.014
656	High Point University	NC	0.7	885	0.80	0.15	0.714	-0.014
657	Whitworth College	WA	0.78	1028	0.90	0.18	0.794	-0.014
658	College of St. Scholastica	MN	0.74	970	0.60	0.17	0.755	-0.015
659	Queens College	NC	0.75	1015	0.80	0.52	0.765	-0.015
660	Goucher	MD	0.83	1110	0.90	0.10	0.845	-0.015
661	Wesleyan	CT	0.93	1280	0.90	0.01	0.945	-0.015
662	Shenandoah University	VA	0.68	876	0.40	0.20	0.695	-0.015
663	Bartlesville Wesleyan College	OK	0.68	870	0.90	0.37	0.695	-0.015
664	Northwestern College	MN	0.71	900	0.70	0.05	0.725	-0.015
665	Ohio Wesleyan	OH	0.82	1085	0.90	0.02	0.836	-0.016
666	Williams College	MA	0.96	1335	0.90	0.01	0.976	-0.016
667	Lee College	TN	0.7	884	0.70	0.06	0.716	-0.016
668	Northwestern State Oklahoma Univ.	OK	0.68	880	0.30	0.18	0.696	-0.016
669	University of Miami	FL	0.81	1075	0.90	0.09	0.826	-0.016
670	Spring Arbor College	MI	0.69	880	0.90	0.28	0.706	-0.016
671	Stetson University	FL	0.78	1020	0.80	0.03	0.796	-0.016
672	Princeton University	NJ	0.97	1355	0.90	0.02	0.986	-0.016
673	Clarkson University	NY	0.85	1140	0.90	0.02	0.866	-0.016
674	Charleston Southern Univ.	SC	0.7	947	0.20	0.42	0.716	-0.016
675	Bradley University	IL	0.83	1115	0.90	0.12	0.846	-0.016
676	U. of S. Carolina-Spartanburg	SC	0.66	870	0.10	0.32	0.677	-0.017
677	Immaculata College	PA	0.71	965	0.90	0.73	0.727	-0.017
678	Univ. Southwestern Louisiana	LA	0.64	790	0.80	0.21	0.657	-0.017
679	Hampshire College	MA	0.85	1140	0.90	0.00	0.867	-0.017
680	Limestone College	SC	0.62	790	0.70	0.50	0.638	-0.018
681	Oklahoma State University	OK	0.76	1010	0.50	0.11	0.778	-0.018
682	Freed Hardeman Univ.	TN	0.7	880	0.80	0.03	0.718	-0.018
683	Aurora University	IL	0.67	880	0.70	0.49	0.688	-0.018
684	Marian College	IN	0.69	895	0.70	0.29	0.708	-0.018
685	Asbury College	KY	0.75	968	0.90	0.05	0.769	-0.019
686	Knoxville College	TN	0.5	520	0.90	0.05	0.519	-0.019
687	Edinboro Univ. of Penn	PA	0.7	890	0.80	0.11	0.719	-0.019
688	Webster University	MO	0.72	985	0.40	0.49	0.739	-0.019
689	Midwestern State University	TX	0.64	831	0.30	0.34	0.659	-0.019
690	Bridgewater State College	MA	0.7	918	0.50	0.23	0.719	-0.019
691	McKendree College	IL	0.72	970	0.60	0.43	0.739	-0.019
692	Lock Haven U. of Penn.	PA	0.76	990	0.90	0.07	0.780	-0.020
693	University of Dubuque	IA	0.71	920	0.80	0.21	0.730	-0.020
694	Andrews University	MI	0.69	880	0.80	0.17	0.710	-0.020
695	Univ. of South Florida	FL	0.76	1035	0.70	0.40	0.780	-0.020
696	Nyack College	NY	0.71	905	0.80	0.06	0.730	-0.020
697	Wheeling Jesuit College	WV	0.71	925	0.80	0.25	0.730	-0.020
698	Lawrence University	WI	0.85	1150	0.90	0.04	0.871	-0.021
699	Ursuline College	OH	0.62	810	0.40	0.50	0.641	-0.021
700	Central Washington University	WA	0.73	963	0.50	0.12	0.751	-0.021
701	Eastern Michigan University	MI	0.69	904	0.70	0.33	0.711	-0.021
702	Spring Hill College	AL	0.75	995	0.70	0.17	0.771	-0.021
703	West Virginia Wesleyan College	WV	0.72	925	0.80	0.06	0.741	-0.021

	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
704	Centre College	KY	0.84	1130	0.90	0.00	0.862	-0.022
705	Macalester College	MN	0.89	1225	0.90	0.05	0.912	-0.022
706	University of Tampa	FL	0.71	932	0.70	0.24	0.732	-0.022
707	Univ. of Massachusetts-Lowell	MA	0.7	955	0.20	0.40	0.722	-0.022
708	West Liberty State College	WV	0.67	840	0.80	0.09	0.692	-0.022
709	Carson-Newman College	TN	0.73	970	0.40	0.12	0.752	-0.022
710	Dickinson State University	ND	0.67	840	0.90	0.13	0.692	-0.022
711	Northeastern University	MA	0.72	975	0.70	0.47	0.743	-0.023
712	Univ. of Wisconsin-River Falls	WI	0.69	880	0.80	0.12	0.713	-0.023
713	Lewis University	IL	0.66	880	0.30	0.40	0.683	-0.023
714	Oberlin College	OH	0.89	1225	0.90	0.03	0.913	-0.023
715	Southern Nazarene Univ	OK	0.71	920	0.80	0.15	0.733	-0.023
716	Wittenberg College	OH	0.81	1085	0.90	0.05	0.834	-0.024
717	Bradford College	MA	0.7	900	0.80	0.12	0.724	-0.024
718	Univ. of Colorado-Boulder	CO	0.8	1075	0.90	0.12	0.824	-0.024
719	Indiana University South Bend	IN	0.64	875	0.00	0.53	0.664	-0.024
720	Seton Hill College	PA	0.72	945	0.90	0.24	0.745	-0.025
721	Arkansas State University	AR	0.65	840	0.30	0.16	0.675	-0.025
722	Harvard University	MA	0.96	1385	0.90	0.33	0.985	-0.025
723	Bluefield State College	WV	0.59	780	0.00	0.47	0.615	-0.025
724	Dennison	OH	0.8	1065	0.90	0.01	0.825	-0.025
725	Hobart-William Smith	NY	0.82	1100	0.90	0.00	0.845	-0.025
726	Manchester College	IN	0.71	906	0.90	0.03	0.735	-0.025
727	Pikeville College	KY	0.62	790	0.20	0.14	0.645	-0.025
728	The Citadel	SC	0.76	1000	0.90	0.06	0.786	-0.026
729	Lincoln Memorial Univ	TN	0.68	920	0.30	0.39	0.706	-0.026
730	Utica Col. of Syracuse	NY	0.69	910	0.80	0.35	0.716	-0.026
731	Hamline University	MN	0.81	1090	0.90	0.06	0.836	-0.026
732	Mayville State Univ	ND	0.61	740	0.80	0.08	0.637	-0.027
733	University of Southern Indiana	IN	0.62	822	0.20	0.41	0.647	-0.027
734	American Intl. College	MA	0.67	875	0.60	0.24	0.697	-0.027
735	Centenary College	NJ	0.64	850	0.70	0.56	0.668	-0.028
736	Hendrix University	AR	0.8	1075	0.80	0.01	0.828	-0.028
737	College of St. Catherine	MN	0.72	950	0.90	0.23	0.748	-0.028
738	Delaware Valley College	PA	0.68	900	0.80	0.39	0.708	-0.028
739	Hillsdale College	MI	0.8	1070	0.90	0.00	0.828	-0.028
740	University of Kentucky	KY	0.78	1050	0.90	0.15	0.808	-0.028
741	Francis Marion Univ.	SC	0.64	820	0.40	0.12	0.668	-0.028
742	MIT	MA	0.97	1375	0.90	0.00	0.999	-0.029
743	University of Colorado-Denver	CO	0.71	962	0.70	0.41	0.739	-0.029
744	Missouri Southern State	MO	0.65	880	0.10	0.37	0.679	-0.029
745	SUNY Col. Arts & Sci. New Paltz	NY	0.74	1008	0.50	0.23	0.770	-0.030
746	New Mexico Highlands Univ	NM	0.59	740	0.40	0.19	0.620	-0.030
747	St. Edwards University	TX	0.68	905	0.70	0.36	0.710	-0.030
748	University of Dallas	TX	0.82	1120	0.80	0.06	0.850	-0.030
749	Eureka College	IL	0.71	920	0.80	0.03	0.740	-0.030
750	Marshall University	WV	0.71	970	0.20	0.23	0.740	-0.030
751	University of Wyoming	WY	0.72	970	0.40	0.15	0.750	-0.030
752	Albion College	MI	0.82	1110	0.90	0.00	0.851	-0.031
753	SUNY College-Cortland	NY	0.75	992	0.90	0.07	0.781	-0.031
754	Lynchburg College	VA	0.68	875	0.90	0.14	0.711	-0.031
755	University of South Dakota	SD	0.7	920	0.80	0.18	0.731	-0.031
756	Bluffton College	OH	0.73	960	0.90	0.09	0.762	-0.032
757	Southeast Missouri State Univ	MO	0.69	920	0.40	0.16	0.722	-0.032
758	Hanover College	IN	0.8	1078	0.90	0.01	0.832	-0.032
759	University of Houston	TX	0.71	975	0.50	0.38	0.742	-0.032
760	Rensselaer Polytechnic Inst	NY	0.87	1205	0.90	0.02	0.903	-0.033
761	National-Louis University	IL	0.61	790	0.10	0.14	0.643	-0.033
762	Mississippi Valley State	MS	0.78	1050	0.90	0.08	0.813	-0.033
763	University of Toledo	OH	0.7	940	0.60	0.26	0.733	-0.033
764	University of Indianapolis	IN	0.67	910	0.70	0.53	0.703	-0.033
765	Hampden-Sydney	VA	0.79	1060	0.90	0.00	0.823	-0.033
766	Oglethorpe College	GA	0.82	1150	0.90	0.34	0.853	-0.033
767	Loyola Univ. of New Orleans	LA	0.75	1025	0.70	0.25	0.783	-0.033

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768	Bard College	NY	0.88	1230	0.90	0.07	0.914	-0.034
769	Central College	IA	0.76	1010	0.90	0.02	0.794	-0.034
770	Concordia-Morehead	MN	0.79	1065	0.90	0.03	0.824	-0.034
771	Chaminade Univ. of Honolulu	HI	0.62	850	0.30	0.60	0.654	-0.034
772	Western Kentucky University	KY	0.67	880	0.70	0.21	0.705	-0.035
773	Chatham	PA	0.74	1005	0.80	0.25	0.775	-0.035
774	Southern Illinois U.-Carbondale	IL	0.67	880	0.50	0.11	0.705	-0.035
775	Union College	KY	0.61	775	0.50	0.13	0.645	-0.035
776	Indiana University Kokomo	IN	0.58	800	0.00	0.65	0.616	-0.036
777	Rice University	TX	0.95	1364	0.70	0.02	0.986	-0.036
778	University of Redlands	CA	0.78	1050	0.90	0.02	0.816	-0.036
779	Northern Illinois University	IL	0.73	970	0.90	0.10	0.767	-0.037
780	St Joseph's College	IN	0.68	900	0.70	0.19	0.717	-0.037
781	Indiana U. Purdue U. Fort Wayne	IN	0.62	864	0.00	0.55	0.657	-0.037
782	Long Island Univ. Brooklyn	NY	0.63	830	0.20	0.14	0.668	-0.038
783	Mount Mercy College	IA	0.71	970	0.70	0.33	0.748	-0.038
784	Rhodes College	TN	0.86	1200	0.90	0.05	0.898	-0.038
785	Northeastern State Univ	OK	0.64	840	0.60	0.24	0.678	-0.038
786	Silver Lake College	WI	0.58	790	0.00	0.51	0.618	-0.038
787	University of Mobile	AL	0.68	920	0.30	0.17	0.719	-0.039
788	Carnegie Mellon University	PA	0.88	1240	0.90	0.07	0.919	-0.039
789	SUNY-Oswego	NY	0.76	1035	0.80	0.12	0.799	-0.039
790	Converse College	SC	0.77	1045	0.90	0.09	0.809	-0.039
791	University of Alabama-Huntsville	AL	0.69	985	0.20	0.56	0.729	-0.039
792	University of Mary	ND	0.67	880	0.80	0.17	0.710	-0.040
793	Concordia College	NY	0.68	902	0.70	0.16	0.720	-0.040
794	Fort Hays State Univ.	KS	0.64	840	0.50	0.16	0.680	-0.040
795	Western Oregon State College	OR	0.67	878	0.70	0.10	0.710	-0.040
796	VMI	VA	0.76	1020	0.90	0.00	0.800	-0.040
797	Marietta College	OH	0.75	1020	0.90	0.17	0.791	-0.041
798	George Mason Univ.	VA	0.75	1055	0.40	0.27	0.791	-0.041
799	University of Tulsa	OK	0.78	1085	0.60	0.12	0.822	-0.042
800	Lake Forest	IL	0.76	1025	0.90	0.02	0.802	-0.042
801	Catawba College	NC	0.68	885	0.90	0.05	0.722	-0.042
802	Roanoke College	VA	0.74	1000	0.90	0.12	0.782	-0.042
803	Edgewood College	WI	0.65	880	0.80	0.46	0.693	-0.043
804	St. Mary's Univ. of Minnesota	MN	0.69	906	0.90	0.06	0.733	-0.043
805	Nova Southeastern Univ.	FL	0.65	905	0.20	0.41	0.694	-0.044
806	Buena Vista University	IA	0.73	990	0.90	0.16	0.774	-0.044
807	Arizona State University	AZ	0.7	965	0.50	0.25	0.744	-0.044
808	University of Central Florida	FL	0.72	1005	0.70	0.38	0.765	-0.045
809	Lincoln University	MO	0.56	740	0.30	0.40	0.605	-0.045
810	Park College	MO	0.61	820	0.70	0.49	0.655	-0.045
811	Union University	TN	0.69	970	0.00	0.23	0.735	-0.045
812	Newberry College	SC	0.66	865	0.70	0.06	0.705	-0.045
813	Voorhes College	SC	0.54	640	0.90	0.05	0.586	-0.046
814	Dominican Col. of San Rafael	CA	0.68	910	0.80	0.18	0.726	-0.046
815	Minnesota-Morris	MN	0.82	1150	0.90	0.12	0.866	-0.046
816	University of Chicago	IL	0.91	1300	0.90	0.01	0.956	-0.046
817	Northern Arizona University	AZ	0.69	925	0.90	0.18	0.737	-0.047
818	Urbana University	OH	0.6	790	0.40	0.20	0.647	-0.047
819	Southwestern College	KS	0.66	880	0.70	0.17	0.707	-0.047
820	North Central College	IL	0.74	1040	0.80	0.37	0.787	-0.047
821	Southwest Missouri State	MO	0.68	920	0.70	0.20	0.728	-0.048
822	Culver-Stockton College	MO	0.69	920	0.90	0.12	0.738	-0.048
823	Okl. Christian U. Sci & Arts	OK	0.69	920	0.90	0.11	0.738	-0.048
824	Holy Names College	CA	0.67	936	0.70	0.51	0.718	-0.048
825	Abilene Christian University	TX	0.71	960	0.90	0.14	0.759	-0.049
826	Carthage College	WI	0.71	980	0.90	0.33	0.759	-0.049
827	University of Texas-Arlington	TX	0.66	930	0.30	0.43	0.709	-0.049
828	Heidelberg College	OH	0.72	985	0.90	0.20	0.769	-0.049
829	Univ. of Wisconsin-Milwaukee	WI	0.68	970	0.20	0.42	0.729	-0.049
830	Randolph-Macon Women's	VA	0.76	1045	0.90	0.08	0.810	-0.050
831	Ouachita Baptist University	AR	0.74	1010	0.80	0.04	0.790	-0.050

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832	Columbus State University	GA	0.64	880	0.50	0.37	0.690	-0.050
833	Kentucky State Univ.	KY	0.59	767	0.90	0.33	0.640	-0.050
834	Ripon College	WI	0.79	1095	0.90	0.02	0.841	-0.051
835	Univ. of North Texas	TX	0.7	977	0.50	0.25	0.751	-0.051
836	University of Central Arkansas	AR	0.64	880	0.00	0.12	0.691	-0.051
837	Scripps College	CA	0.86	1220	0.90	0.01	0.911	-0.051
838	Jamestown College	ND	0.69	920	0.90	0.05	0.742	-0.052
839	Claflin College	SC	0.54	650	0.90	0.03	0.592	-0.052
840	Kennesaw State University	GA	0.67	978	0.00	0.51	0.723	-0.053
841	Bethel College	KS	0.71	970	0.90	0.16	0.763	-0.053
842	Sam Houston University	TX	0.59	802	0.00	0.19	0.644	-0.054
843	Lyndon State College	VT	0.64	850	0.70	0.11	0.694	-0.054
844	Virginia Wesleyn	VA	0.73	1025	0.70	0.23	0.784	-0.054
845	Trinity University	TX	0.84	1193	0.90	0.04	0.895	-0.055
846	Graceland College	IA	0.71	1025	0.90	0.66	0.765	-0.055
847	Seattle University	WA	0.73	1020	0.80	0.22	0.785	-0.055
848	Quincy University	IL	0.75	1045	0.70	0.07	0.805	-0.055
849	Framingham State College	MA	0.66	911	0.70	0.33	0.715	-0.055
850	Belhaven College	MS	0.64	880	0.60	0.33	0.695	-0.055
851	Mississippi U. for Women	MS	0.64	885	0.50	0.33	0.695	-0.055
852	Utah State University	UT	0.67	925	0.70	0.29	0.725	-0.055
853	Weber State University	UT	0.6	840	0.10	0.40	0.655	-0.055
854	Eastern Nazarene College	MA	0.71	960	0.90	0.03	0.765	-0.055
855	Northwestern State U. of Louis.	LA	0.59	790	0.50	0.27	0.646	-0.056
856	Univ. Mary Hardin-Baylor	TX	0.64	859	0.80	0.21	0.696	-0.056
857	Portland State University	OR	0.63	901	0.10	0.46	0.686	-0.056
858	Wingate University	NC	0.63	835	0.80	0.15	0.686	-0.056
859	Union College	NE	0.65	880	0.70	0.19	0.706	-0.056
860	Belmont University	TN	0.7	975	0.70	0.24	0.756	-0.056
861	Pacific Christian College	CA	0.66	886	0.80	0.12	0.716	-0.056
862	Guilford College	NC	0.75	1050	0.90	0.19	0.806	-0.056
863	Morningside College	IA	0.69	970	0.30	0.17	0.747	-0.057
864	Maryville College	TN	0.67	915	0.80	0.21	0.727	-0.057
865	Georgia Institute of Technology	GA	0.86	1240	0.80	0.06	0.917	-0.057
866	Lake Superior State University	MI	0.64	880	0.40	0.20	0.697	-0.057
867	Temple University	PA	0.69	969	0.50	0.24	0.747	-0.057
868	Adelphi University	NY	0.67	945	0.40	0.30	0.728	-0.058
869	LaGrange College	GA	0.68	930	0.80	0.15	0.739	-0.059
870	N. Adams State College	MA	0.65	877	0.90	0.20	0.709	-0.059
871	Murray State Univ.	KY	0.67	920	0.60	0.13	0.729	-0.059
872	Wells college	NY	0.77	1075	0.90	0.02	0.830	-0.060
873	Pine Manor College	MA	0.63	830	0.90	0.06	0.691	-0.061
874	Concordia College-St.Paul	MN	0.65	880	0.70	0.10	0.711	-0.061
875	Columbia Union College	MD	0.64	905	0.70	0.51	0.701	-0.061
876	Long Island U. C.W. Post Col.	NY	0.68	950	0.60	0.20	0.742	-0.062
877	Reed College	OR	0.87	1260	0.90	0.04	0.932	-0.062
878	Eckard College	FL	0.76	1060	0.90	0.01	0.822	-0.062
879	Louisiana College	LA	0.66	920	0.50	0.20	0.722	-0.062
880	Houston Baptist University	TX	0.67	960	0.20	0.27	0.732	-0.062
881	St. Martin's College	WA	0.68	960	0.90	0.42	0.742	-0.062
882	Westminster Col. of Salt Lake	UT	0.63	910	0.10	0.43	0.693	-0.063
883	Piedmont College	GA	0.61	830	0.30	0.09	0.673	-0.063
884	Central Missouri State Univ.	MO	0.62	840	0.60	0.15	0.683	-0.063
885	Illinois Institute of Tech	IL	0.78	1130	0.80	0.27	0.843	-0.063
886	Henderson State University	AR	0.61	840	0.50	0.26	0.674	-0.064
887	Wayne State College	NE	0.65	880	0.90	0.13	0.715	-0.065
888	Concord College	WV	0.65	920	0.40	0.28	0.715	-0.065
889	George Fox University	OR	0.71	985	0.70	0.01	0.775	-0.065
890	Winona State University	MN	0.7	978	0.80	0.16	0.765	-0.065
891	McMurry University	TX	0.64	890	0.90	0.38	0.706	-0.066
892	Dakota State University	SD	0.61	840	0.80	0.37	0.676	-0.066
893	Nicholls State University	LA	0.58	790	0.40	0.22	0.646	-0.066
894	U. of Maine-Presque Isle	ME	0.58	800	0.50	0.36	0.646	-0.066
895	Transylvania	KY	0.8	1145	0.90	0.07	0.866	-0.066

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	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
896	Agnes Scott	GA	0.75	1060	0.90	0.11	0.816	-0.066
897	Univ. of Northern Colorado	CO	0.66	905	0.90	0.16	0.727	-0.067
898	Livingstone College	NC	0.62	820	0.90	0.03	0.687	-0.067
899	Southwest Texas State Univ.	TX	0.64	880	0.80	0.21	0.707	-0.067
900	Flagler College	FL	0.71	980	0.90	0.01	0.778	-0.068
901	Wichita State University	KS	0.63	920	0.10	0.43	0.698	-0.068
902	Southwest State University	MN	0.61	840	0.40	0.14	0.678	-0.068
903	William Carey College	MS	0.58	790	0.50	0.22	0.649	-0.069
904	Montana State University	MT	0.7	975	0.90	0.11	0.769	-0.069
905	Armstrong State College	GA	0.62	907	0.10	0.45	0.690	-0.070
906	Pitzer College	CA	0.8	1155	0.90	0.10	0.870	-0.070
907	University of West Florida	FL	0.67	972	0.50	0.39	0.740	-0.070
908	Northwestern College	IA	0.7	970	0.90	0.04	0.770	-0.070
909	Georgetown College	KY	0.7	970	0.90	0.04	0.770	-0.070
910	St. Leo College	FL	0.61	860	0.90	0.52	0.681	-0.071
911	SUNY College-Oneonta	NY	0.7	977	0.90	0.09	0.771	-0.071
912	Tri-State University	IN	0.67	930	0.90	0.15	0.741	-0.071
913	University of the Ozarks	AR	0.6	820	0.50	0.10	0.672	-0.072
914	Missouri Western State	MO	0.57	790	0.40	0.27	0.643	-0.073
915	Roosevelt University	IL	0.59	880	0.10	0.64	0.664	-0.074
916	Franklin Pierce College	NH	0.59	820	0.90	0.43	0.664	-0.074
917	Shorter College	GA	0.66	920	0.80	0.14	0.734	-0.074
918	University of Arkansas-Little Rock	AR	0.58	840	0.10	0.42	0.654	-0.074
919	Mount St. Mary College	NY	0.62	875	0.70	0.34	0.694	-0.074
920	Johnson State College	VT	0.61	838	0.80	0.20	0.685	-0.075
921	Berry College	GA	0.73	1030	0.90	0.02	0.805	-0.075
922	Southwestern Oklahoma State U.	OK	0.58	790	0.60	0.14	0.656	-0.076
923	Gardner Webb University	NC	0.59	811	0.70	0.21	0.666	-0.076
924	Western New Mexico	NM	0.53	790	0.10	0.76	0.606	-0.076
925	Central Methodist Col.	MO	0.64	880	0.90	0.09	0.717	-0.077
926	Malone College	OH	0.67	945	0.80	0.15	0.747	-0.077
927	Adrian College	MI	0.69	970	0.90	0.09	0.767	-0.077
928	Univ. of Missouri-Kansas City	MO	0.7	1050	0.20	0.36	0.777	-0.077
929	Texas Wesleyan University	TX	0.62	890	0.40	0.29	0.698	-0.078
930	Northwest Missouri State Univ.	MO	0.64	880	0.90	0.08	0.718	-0.078
931	Norwich University	VT	0.61	835	0.90	0.16	0.688	-0.078
932	Ferrum College	VA	0.59	795	0.90	0.12	0.668	-0.078
933	Northern State University	SD	0.6	840	0.60	0.23	0.679	-0.079
934	Dana College	NE	0.66	920	0.90	0.10	0.739	-0.079
935	Franklin College	IN	0.72	1030	0.80	0.07	0.799	-0.079
936	East Central University	OK	0.6	840	0.40	0.12	0.680	-0.080
937	Pfeiffer College	NC	0.6	825	0.80	0.16	0.680	-0.080
938	Pacific University	OR	0.71	1005	0.90	0.04	0.790	-0.080
939	Univ. of Missouri-Rolla	MO	0.78	1160	0.50	0.13	0.860	-0.080
940	Cornell College	IA	0.75	1075	0.90	0.01	0.831	-0.081
941	Ferris State University	MI	0.55	740	0.70	0.14	0.631	-0.081
942	Cal Tech	CA	0.94	1415	0.90	0.00	1.021	-0.081
943	Lewis & Clark	OR	0.76	1100	0.90	0.06	0.842	-0.082
944	University of Texas-San Antonio	TX	0.6	890	0.00	0.38	0.682	-0.082
945	University of Central Oklahoma	OK	0.6	880	0.20	0.37	0.682	-0.082
946	U. of Pittsburgh-Bradford	PA	0.64	915	0.80	0.29	0.722	-0.082
947	Mount Marty College	SD	0.61	880	0.80	0.45	0.693	-0.083
948	Daemen College	NY	0.62	890	0.60	0.28	0.704	-0.084
949	Moorehead State University	MN	0.65	920	0.80	0.14	0.734	-0.084
950	Washburn University	KS	0.59	880	0.10	0.46	0.674	-0.084
951	University of Nebraska-Omaha	NE	0.54	790	0.00	0.41	0.624	-0.084
952	Lawrence Tech. University	MI	0.61	920	0.10	0.48	0.695	-0.085
953	University of Montana	MT	0.66	946	0.70	0.14	0.746	-0.086
954	University of Sioux Falls	SD	0.64	920	0.90	0.32	0.726	-0.086
955	St. John's College	MD	0.8	1175	0.90	0.01	0.886	-0.086
956	Univ. of Wisconsin-Superior	WI	0.63	920	0.40	0.25	0.717	-0.087
957	Anna Maria College	MA	0.62	900	0.80	0.41	0.707	-0.087
958	Univ. of Southern Maine	ME	0.63	945	0.50	0.53	0.717	-0.087
959	University of Tennessee-Martin	TN	0.62	880	0.60	0.12	0.707	-0.087

	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
960	Auburn University-Montgomery	AL	0.59	880	0.00	0.35	0.678	-0.088
961	Westminster College	MO	0.69	990	0.90	0.07	0.780	-0.090
962	Peru State College	NE	0.59	840	0.80	0.30	0.680	-0.090
963	Augusta State University	GA	0.57	850	0.00	0.37	0.660	-0.090
964	Defiance College	OH	0.61	875	0.80	0.28	0.701	-0.091
965	University of Bridgeport	CT	0.59	860	0.70	0.43	0.681	-0.091
966	Milligan College	TN	0.67	1000	0.00	0.07	0.761	-0.091
967	Grand View College	IA	0.57	840	0.00	0.25	0.661	-0.091
968	Tarleton State University	TX	0.59	835	0.60	0.13	0.682	-0.092
969	McNeese State University	LA	0.55	790	0.20	0.19	0.642	-0.092
970	Mills College	CA	0.73	1065	0.90	0.04	0.823	-0.093
971	Morris Brown College	GA	0.6	850	0.60	0.06	0.694	-0.094
972	Idaho State University	ID	0.59	880	0.10	0.27	0.685	-0.095
973	William Woods University	MO	0.63	895	0.90	0.08	0.726	-0.096
974	Faulkner University	AL	0.58	840	0.60	0.27	0.676	-0.096
975	Florida Inst. of Tech	FL	0.72	1060	0.90	0.11	0.816	-0.096
976	State University West Georgia	GA	0.57	815	0.60	0.20	0.666	-0.096
977	Old Dominion University	VA	0.66	985	0.40	0.19	0.756	-0.096
978	Stephen F. Austin State Univ	TX	0.62	885	0.80	0.10	0.717	-0.097
979	Dillard University	LA	0.62	890	0.50	0.01	0.717	-0.097
980	St. Andrew's Presbyterian	NC	0.65	930	0.90	0.06	0.747	-0.097
981	Cumberland University	TN	0.57	840	0.30	0.29	0.667	-0.097
982	Alfred University	NY	0.76	1130	0.90	0.07	0.858	-0.098
983	Sterling College	KS	0.59	870	0.90	0.44	0.691	-0.101
984	Judson College	AL	0.63	920	0.70	0.14	0.731	-0.101
985	Greensboro College	NC	0.61	895	0.90	0.33	0.711	-0.101
986	Jacksonville University	FL	0.64	945	0.70	0.20	0.742	-0.102
987	Western Connecticut State Univ	CT	0.61	928	0.40	0.41	0.712	-0.102
988	University of Alaska-Anchorage	AK	0.57	881	0.40	0.63	0.673	-0.103
989	Boise State University	ID	0.57	872	0.00	0.36	0.673	-0.103
990	Regis University	CO	0.7	1110	0.50	0.63	0.803	-0.103
991	Concordia University	OR	0.59	865	0.70	0.26	0.693	-0.103
992	Virginia Intermont College	VA	0.58	837	0.70	0.15	0.684	-0.104
993	Hardin-Simmons University	TX	0.62	915	0.70	0.21	0.724	-0.104
994	Univ. of Missouri-St.Louis	MO	0.63	980	0.60	0.60	0.735	-0.105
995	Columbia College	MO	0.54	840	0.80	0.88	0.646	-0.106
996	Glenville State College	WV	0.54	790	0.60	0.31	0.646	-0.106
997	Sul Ross State University	TX	0.5	715	0.50	0.22	0.607	-0.107
998	Stephens College	MO	0.62	925	0.90	0.35	0.727	-0.107
999	Huntingdon College	AL	0.65	970	0.80	0.20	0.758	-0.108
1000	Oklahoma City University	OK	0.69	1050	0.70	0.23	0.798	-0.108
1001	Marlboro College	VT	0.74	1110	0.90	0.03	0.849	-0.109
1002	St. Francis College	IN	0.59	890	0.60	0.35	0.699	-0.109
1003	Greenville College	IL	0.66	980	0.80	0.09	0.770	-0.110
1004	University of Alaska-Fairbanks	AK	0.6	920	0.70	0.49	0.711	-0.111
1005	U. of Maine-Machias	ME	0.59	895	0.50	0.33	0.701	-0.111
1006	McPherson College	KS	0.62	920	0.90	0.23	0.731	-0.111
1007	Angelo State University	TX	0.63	945	0.80	0.25	0.741	-0.111
1008	Cumberland College	KY	0.6	880	0.70	0.06	0.713	-0.113
1009	N. Carolina Wesleyan College	NC	0.55	830	0.90	0.53	0.663	-0.113
1010	Louisiana State U. Shrevport	LA	0.54	840	0.00	0.35	0.655	-0.115
1011	Antioch College	OH	0.71	1070	0.90	0.03	0.827	-0.117
1012	Our Lady of the Lake	TX	0.54	833	0.40	0.42	0.658	-0.118
1013	Kentucky Wesleyan Coll.	KY	0.64	970	0.70	0.15	0.758	-0.118
1014	Southern Arkansas University	AR	0.58	880	0.40	0.17	0.699	-0.119
1015	Stevens Institute of Tech	NJ	0.75	1150	0.80	0.01	0.870	-0.120
1016	University of Alaska-Southeast	AK	0.53	867	0.20	0.79	0.650	-0.120
1017	Evergreen State Coll.	WA	0.67	1015	0.80	0.07	0.791	-0.121
1018	Long Island U. Southhampton Col	NY	0.67	1015	0.90	0.11	0.791	-0.121
1019	Illinois College	IL	0.73	1125	0.80	0.04	0.854	-0.124
1020	LeTourneau University	TX	0.69	1055	0.80	0.05	0.814	-0.124
1021	Brenau University	GA	0.59	920	0.60	0.35	0.716	-0.126
1022	Belmont Abbey College	NC	0.63	973	0.80	0.20	0.760	-0.130
1023	Southern Oregon Univ.	OR	0.6	940	0.50	0.21	0.733	-0.133

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	Institution	State	Retention 1995	SAT 1992	%OC 1995	%PT 1992	Predicted	Difference
1024	University of New Orleans	LA	0.64	1045	0.10	0.30	0.775	-0.135
1025	Wesleyan College	GA	0.69	1069	0.90	0.01	0.827	-0.137
1026	Bennington College	VT	0.69	1070	0.90	0.00	0.828	-0.138
1027	Univ. of Colorado-Col. Springs	CO	0.59	975	0.00	0.39	0.728	-0.138
1028	Montana Tech	MT	0.63	1005	0.50	0.22	0.769	-0.139
1029	Lambuth University	TN	0.61	970	0.50	0.22	0.749	-0.139
1030	Shepherd University	WV	0.67	1100	0.30	0.34	0.809	-0.139
1031	Bethany College	KS	0.6	920	0.90	0.06	0.741	-0.141
1032	Minot State University	ND	0.54	840	0.50	0.12	0.682	-0.142
1033	Missouri Valley College	MO	0.53	800	0.90	0.08	0.673	-0.143
1034	University of Utah	UT	0.61	1016	0.10	0.35	0.756	-0.146
1035	Adams State College	CO	0.56	880	0.60	0.10	0.708	-0.148
1036	Unity College	ME	0.62	965	0.90	0.02	0.769	-0.149
1037	Methodist College	NC	0.52	835	0.40	0.26	0.669	-0.149
1038	Bethel College	TN	0.51	790	0.80	0.17	0.660	-0.150
1039	University of New Haven	CT	0.59	990	0.60	0.58	0.742	-0.152
1040	Simons Rock of Bard	MA	0.73	1169	0.90	0.02	0.882	-0.152
1041	Warren Wilson College	NC	0.63	990	0.90	0.01	0.783	-0.153
1042	Eastern New Mexico University	NM	0.55	880	0.70	0.14	0.709	-0.159
1043	Oakland City University	IN	0.53	870	0.70	0.25	0.697	-0.167
1044	Fisk University	TN	0.54	869	0.90	0.01	0.716	-0.176
1045	University of North Alabama	AL	0.5	840	0.50	0.20	0.678	-0.178
1046	St. Augustine's College	NC	0.5	813	0.90	0.06	0.681	-0.181
1047	Northland College	WI	0.6	1005	0.80	0.07	0.785	-0.185
1048	Phillips University	OK	0.53	920	0.40	0.14	0.723	-0.193
1049	Tennessee Wesleyan College	TN	0.44	770	0.60	0.30	0.635	-0.195
1050	Black Hills State College	SD	0.47	840	0.50	0.36	0.668	-0.198
1051	William Penn College	IA	0.49	840	0.70	0.08	0.690	-0.200
1052	Wilberforce University	OH	0.6	1042	0.80	0.04	0.808	-0.208
1053	Averett College	VA	0.53	980	0.80	0.47	0.748	-0.218
1054	Alice Loyd College	KY	0.49	880	0.80	0.04	0.717	-0.227
1055	Kendall College	IL	0.48	900	0.40	0.18	0.710	-0.230
1056	Kansas Newman College	KS	0.45	880	0.40	0.49	0.680	-0.230
1057	Iowa Wesleyan College	IA	0.43	880	0.80	0.40	0.696	-0.266
1058	Rocky Mountain College	MT	0.49	975	0.80	0.17	0.763	-0.273
1059	William Tyndale College	MI	0.31	740	0.10	0.61	0.587	-0.277
1060	Colorado Christian University	CO	0.42	894	0.70	0.05	0.722	-0.302
1061	West Virginia State Col.	WV	0.28	740	0.10	0.41	0.599	-0.319
1062	Brigham Young University	UT	0.51	1130	0.80	0.07	0.855	-0.345
1063	Alaska Pacific University	AK	0.37	990	0.10	0.72	0.720	-0.350

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Private Correlates of Educational Attainment

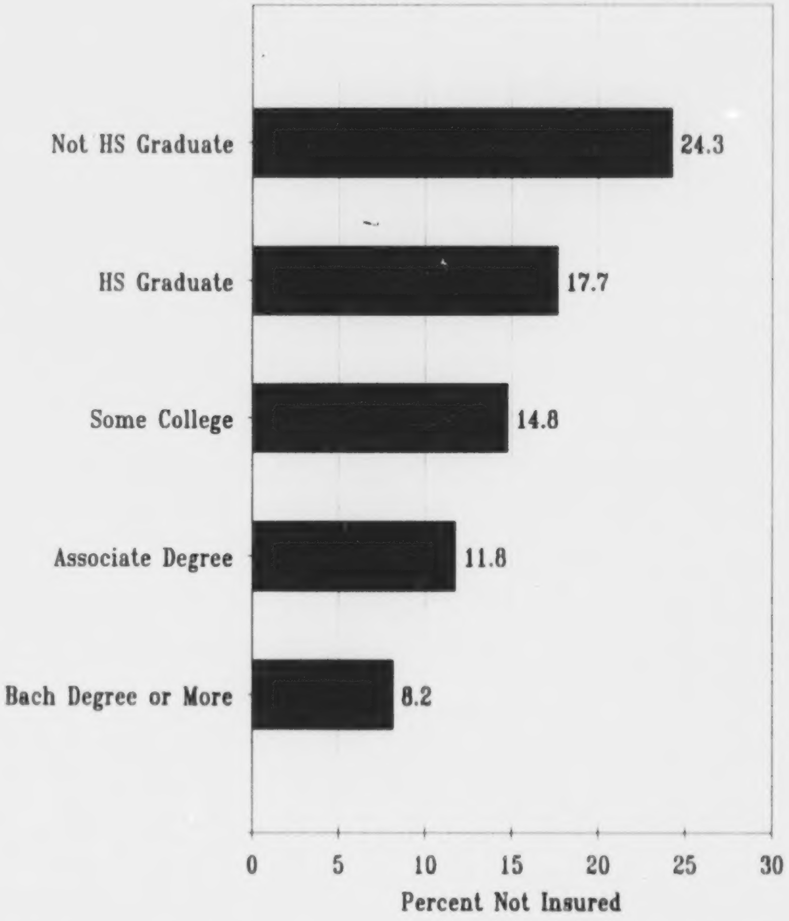
By nearly every measure we can find, people with more formal education live better than do others with less education.

This most simple of findings from our search for readily available data has the most profound of implications:

- Individuals live in families, and family welfare is improved by the educational attainment of the adults who head the family.
- Families live in communities, and the welfare of communities is improved with the educational attainment of the heads of families.
- Communities become villages and towns and cities, and these too are improved by the level of educational attainment among the adults who lead them.
- States consist of the individuals, families, communities and cities where these people live, and by most measures states with higher levels of educational attainment have higher living standards than do states with lower living standards.
- The country consists of the 50 states, and so too is the welfare of the country determined substantially by the educational attainment of its citizens.

If states and the federal government were not so aggressively *reducing* social investment in the higher educations of its citizens, we would not feel compelled to illustrate this obvious, simple and most profound of truths. But such is the case:

- Higher education's share of all federal expenditures has been shrinking since 1981, from 0.95 percent to 0.68 percent by 1994.
- Higher education's share of state and local government expenditures has been shrinking from its peak of 8.15 percent in 1982 to 6.45 percent by 1994, or back to where we were in 1965.



Lack of Coverage by Health Insurance
by Educational Attainment
1995

This growing disparity between the importance of postsecondary education and training to our private and collective welfare, and our social investment in the human resources that determine our living standard continues to puzzle us. So, for the record, we have reviewed a wide variety of measures of the human condition in the United States to compile the following list of private correlates of educational attainment.

The Data

Most often data describing the human condition in the United States is reported at four levels of educational attainment:

- Not high school graduate
- High school graduate, including high school equivalency certification
- Some college, which includes those who started college but left without a degree, and the newer and smaller Census category of associate degree
- Bachelor's degree or more, including masters, doctors and professional degrees.

We have grouped the correlates of educational attainment into categories, to wit:

- Population
- Employment and unemployment
- Income, benefits, wealth and expenditures
- Poverty, welfare, dependency
- Health and nutrition
- Personal life
- Family life
- Performance of children in school
- Community life
- Crime and punishment

The sources of the data are noted in the tabulation. Most data are collected are reported by the Census Bureau, either from the Current Population Survey, the Survey of Income and Program Participation, or the 1990 decennial census of the population. These data have been reported in many Census publications in the past, but are increasingly available for downloading from the Census Bureau's website. The data on employment and unemployment reported by the Bureau of Labor Statistics are also collected in the Current Population Survey.

Other data included here come from other government agencies, many private organizations through their normal market research activities, and from other scattered sources. We have found especially helpful concentrations of these studies and reports in *American Demographics* magazine and the *Statistical Abstract of the United States, 1996*, and for prior years of this data on the United States.

The compendium that follows will be updated and extended from time to time because we see a need to remind people who read OPPORTUNITY about the importance of what higher education is all about (and because we do not see anyone else doing what we have attempted here). Therefore, we invite those who come across other descriptions of the human condition measured in terms of educational attainment to share their findings with OPPORTUNITY for inclusion in future reports.

Finally, readers will recognize that data from sources such as these have been used to design the posters distributed with issues of OPPORTUNITY to our subscribers. We will continue to do so. Look for future posters that describe how adults with different levels of educational attainment live their adult lives. Education does not just make a difference--it differentiates those who live very well from those who are just barely scrimping by in their lives. Increasingly, education determines who thrives and who perishes in modern times in the United States.

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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Private Correlates of Educational Attainment

Postsecondary Education OPPORTUNITY

Correlate	Educational Attainment				Source
	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	
Population					
Educational Attainment of Population 25 Years and Over (1995)(% Distribution)					Bureau of the Census. *Current Population Reports*, P20-489, 459, and 1990 Census.
Total	18.3%	33.9%	24.8%	23.0%	
White	17.0%	34.0%	25.0%	24.0%	
Black	26.2%	36.2%	24.3%	13.2%	
Hispanics	46.6%	26.3%	17.8%	9.3%	
Asian	16.4%	23.7%	21.7%	38.2%	
Arab-Americans	17%	21%	27%	35%	
Male	18.3%	31.9%	23.8%	26.0%	
Female	18.4%	35.7%	25.7%	20.2%	
Educational Attainment of Population by Age (1995) (% Distribution)					Bureau of the Census. *Current Population Reports*, P20-489.
25 to 34 years	12.9%	34.0%	28.2%	25.0%	
35 to 44 years	11.6%	33.3%	28.4%	26.6%	
45 to 54 years	13.7%	32.5%	25.7%	28.0%	
55 to 64 years	22.8%	37.3%	20.8%	19.0%	
65 to 74 years	31.1%	36.4%	18.3%	14.2%	
75 years old and over	43.2%	30.2%	15.3%	11.2%	
Educational Attainment by Marital Status, Age 25 and over (1995) (% Distribution)					Bureau of the Census. *Current Population Reports*, P20-489.
Never married	16.7%	31.1%	24.0%	28.2%	
Married spouse present	15.4%	34.3%	25.2%	25.1%	
Married spouse absent	31.2%	32.8%	23.7%	12.3%	
Separated	28.8%	35.5%	25.1%	10.6%	
Widowed	40.9%	33.3%	16.5%	9.3%	
Divorced	16.0%	36.9%	29.8%	17.3%	
Educational Attainment of Population by Region (1995) (% Distribution)					Bureau of the Census. *Current Population Reports*, P20-489.
Northeast	16.6%	37.2%	20.0%	26.3%	
Midwest	16.1%	37.5%	24.8%	21.7%	
South	21.6%	32.9%	24.3%	21.1%	
West	17.0%	28.7%	30.1%	24.2%	
Educational Attainment of Population by Metropolitan and Nonmetropolitan Residence, Age 25 and over (1995) (% Distribution)					Bureau of the Census. *Current Population Reports*, P20-489.
Metropolitan areas over 1,000,000	17.2%	30.8%	25.0%	27.0%	
Central cities	23.4%	29.6%	22.6%	24.4%	
Balance of MSA	13.7%	31.5%	26.4%	28.4%	
Metropolitan areas under 1,000,000	17.0%	34.9%	25.5%	22.6%	
Central cities	18.2%	32.6%	26.2%	23.0%	
Balance of MSA	16.3%	36.2%	25.1%	22.4%	
Nonmetropolitan area	23.1%	39.0%	23.1%	14.8%	

Correlate	Educational Attainment				Source
	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	
Educational Attainment for Persons 25 and Over by State (1990) (% Distribution)	**24.8%**	**30.0%**	**24.9%**	**20.4%**	Bureau of the Census, *1990 Census of Population*, CPH-L-96.
Alabama	33.1%	29.4%	21.8%	15.6%	
Alaska	13.4%	28.7%	34.8%	23.0%	
Arizona	21.3%	26.1%	32.2%	20.3%	
Arkansas	33.7%	32.7%	20.3%	13.4%	
California	23.8%	22.3%	30.5%	23.4%	
Colorado	15.6%	26.5%	30.9%	27.0%	
Connecticut	20.8%	29.5%	22.5%	27.2%	
Delaware	22.5%	32.7%	23.4%	21.4%	
District of Columbia	26.9%	21.2%	18.7%	33.3%	
Florida	25.6%	30.1%	26.0%	18.3%	
Georgia	29.1%	29.6%	22.0%	19.3%	
Hawaii	19.9%	28.7%	28.4%	22.9%	
Idaho	20.3%	30.4%	31.7%	17.7%	
Illinois	23.8%	30.0%	25.2%	21.1%	
Indiana	24.4%	38.2%	21.9%	15.6%	
Iowa	19.9%	38.5%	24.7%	16.9%	
Kansas	18.7%	32.8%	27.3%	21.1%	
Kentucky	35.4%	31.8%	19.3%	13.6%	
Louisiana	31.7%	31.7%	20.5%	16.1%	
Maine	21.2%	37.1%	23.0%	18.8%	
Maryland	21.6%	28.1%	23.8%	26.5%	
Massachusetts	20.0%	29.7%	23.0%	27.2%	
Michigan	23.2%	32.3%	27.1%	17.3%	
Minnesota	17.6%	33.0%	27.6%	21.9%	
Mississippi	35.7%	27.5%	22.1%	14.8%	
Missouri	26.1%	33.1%	22.9%	17.8%	
Montana	19.0%	33.5%	27.7%	19.8%	
Nebraska	18.2%	34.7%	28.2%	19.0%	
Nevada	21.2%	31.5%	32.0%	15.3%	
New Hampshire	17.8%	31.7%	26.1%	24.3%	
New Jersey	23.3%	31.1%	20.7%	24.8%	
New Mexico	24.9%	28.7%	25.9%	20.4%	
New York	25.2%	29.5%	22.2%	23.1%	
North Carolina	30.0%	29.0%	23.6%	17.4%	
North Dakota	23.3%	28.0%	30.5%	18.0%	
Ohio	24.3%	36.3%	22.3%	17.0%	
Oklahoma	25.4%	30.5%	26.3%	17.8%	
Oregon	18.5%	28.9%	31.9%	20.6%	
Pennsylvania	25.3%	38.6%	18.1%	17.9%	
Rhode Island	28.0%	29.5%	21.3%	21.3%	
South Carolina	31.7%	29.5%	22.1%	16.6%	
South Dakota	22.9%	33.7%	26.2%	17.2%	
Tennessee	32.9%	30.0%	21.1%	15.9%	
Texas	27.9%	25.6%	26.3%	20.4%	
Utah	14.9%	27.2%	35.7%	22.2%	
Vermont	19.2%	34.6%	21.9%	24.3%	
Virginia	24.8%	26.6%	24.0%	24.5%	
Washington	16.2%	27.9%	32.9%	22.9%	
West Virginia	34.0%	36.6%	17.0%	12.3%	
Wisconsin	21.4%	37.1%	23.8%	17.7%	
Wyoming	17.0%	33.2%	31.1%	18.8%	

Correlate	Educational Attainment				Source
	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	
Educational Attainment of Natives and Foreign Born (1996) (% Distribution)					Bureau of the Census. *Current Population Reports*, P20-494.
Native	16.0%	60.4%		23.6%	
Foreign Born	35.6%	40.9%		23.5%	
Naturalized Citizen	21.2%	48.1%		30.8%	
Not a Citizen	44.4%	36.5%		19.1%	
Year of Entry					
Before 1970	30.7%	50.0%		19.3%	
1970 to 1979	35.8%	40.6%		23.6%	
1980 to 1989	38.5%	37.8%		23.6%	
1990 to 1996	36.8%	34.3%		28.9%	
Educational Attainment of Hispanics 25 Years and Over (1993)(% Distribution)					Bureau of the Census. *Current Population Reports*, P20-475.
All Hispanics	46.9%	44.1%		9.0%	
Mexican	53.8%	40.3%		5.9%	
Puerto Rican	40.2%	51.8%		8.0%	
Cuban	37.9%	45.6%		16.5%	
Central/South American	37.1%	47.8%		15.1%	
Other Hispanic	31.1%	53.8%		15.1%	
Employment and Unemployment					
Civilian Labor Force Participation, Age 25 Years and Over (1996)					Bureau of Labor Statistics, unpublished data from Current Population Survey
Civilian noninstitutional population (000)	30,166	56,417	41,688	39,976	
Civilian labor force (000)	12,394	37,026	31,159	32,181	
Labor force participation rate					
Total	41.1%	65.6%	74.7%	80.5%	
Male	54.0%	76.6%	82.2%	85.1%	
Female	29.6%	56.6%	68.4%	75.3%	
White	41.6%	65.0%	73.9%	80.3%	
Male	55.2%	76.6%	82.0%	84.9%	
Female	29.2%	55.4%	66.9%	75.0%	
Black	37.6%	70.2%	80.2%	84.0%	
Male	46.8%	76.3%	83.1%	87.8%	
Female	30.3%	64.9%	78.1%	81.2%	
Hispanic	56.8%	74.6%	81.1%	83.0%	
Male	76.3%	86.5%	88.5%	89.1%	
Female	38.0%	62.8%	74.2%	75.6%	
Worklife Expectancy at Birth (1979-80)					Bureau of Labor Statistics. *Monthly Labor Review*, August 1985.
Male	34.6 yrs	39.9 yrs		41.1 yrs	
Female	22.3 yrs	30.1 yrs		34.9 yrs	
Use of Computers (18 and older) (1993)					Bureau of the Census. http://www.census.gov
Uses computers anywhere	6.3%	25.1%	50.5%	63.4%	
With computer at home	6.6%	16.7%	33.1%	48.7%	
Uses computer at home (% with computer)	30.4%	49.3%	67.9%	76.9%	
Uses computer at school (% of enrolled)	45.8%	51.7%	56.3%	50.5%	
Uses computer at work (% with a job)	10.0%	34.2%	52.6%	69.1%	

Correlate	Educational Attainment				Source
	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	
Use Computers on the Job (1993)	10.0%	34.2%	50.4%	68.8%	Bureau of the Census. Current Population Survey, October 1993, unpublished data.
Analysis/spreadsheets	19.1%	23.7%	33.5%	46.9%	
Bookkeeping/invoicing/inventory	54.4%	52.5%	49.5%	40.0%	
Communications	20.4%	29.4%	38.5%	45.1%	
CAD	3.8%	4.4%	7.3%	10.4%	
Data bases	22.2%	25.8%	33.9%	41.5%	
Desktop publishing/graphics	9.9%	13.3%	20.6%	28.8%	
Education	9.6%	9.5%	13.0%	19.4%	
Programming	8.8%	8.9%	11.3%	16.7%	
Sales and telemarketing	20.6%	17.6%	18.0%	17.0%	
Word processing	16.0%	30.8%	40.9%	54.8%	
Using 4 or more categories	21.8%	29.9%	40.0%	49.2%	
Percent of Life Economically Active from Birth (1979-80)					Bureau of Labor Statistics. *Monthly Labor Review*, August 1985.
Male	49%	57%		59%	
Female	29%	39%		45%	
Workers with Disabilities by Educational Attainment (1991-92) (Percent Distribution)					Bureau of the Census, *Americans with Disabilities*, P70-33.
No disability	15%	37%	23%	25%	
Mild disability	21%	39%	23%	17%	
Severe disability	29%	37%	20%	14%	
Employment/Population Ratios, Age 25 Years and Over (1996)					Bureau of Labor Statistics, unpublished data from Current Population Survey
Total	37.5%	62.6%		78.7%	
Male	49.8%	73.0%		83.3%	
Female	26.6%	54.0%		73.5%	
White	38.3%	62.4%		78.6%	
Male	51.2%	73.5%		83.2%	
Female	26.4%	53.2%		73.2%	
Black	32.8%	63.8%		81.4%	
Male	41.5%	69.1%		84.6%	
Female	25.9%	59.2%		79.0%	
Hispanic	51.3%	69.6%		79.7%	
Male	70.5%	81.0%		86.0%	
Female	32.9%	58.4%		72.4%	
Unemployment Rates, Age 25 Years and Over (1996)					Bureau of Labor Statistics, unpublished data from Current Population Survey
Total	8.7%	4.7%		2.2%	
Male	7.8%	4.7%		2.1%	
Female	10.1%	4.6%		2.3%	
White	8.0%	4.0%		2.1%	
Male	7.2%	4.0%		2.0%	
Female	9.4%	3.9%		2.3%	
Black	12.6%	9.1%		3.1%	
Male	11.3%	9.4%		3.6%	
Female	14.2%	8.7%		2.6%	
Hispanic	9.7%	6.6%		3.8%	
Male	7.7%	6.4%		3.6%	
Female	13.4%	7.0%		4.2%	

Correlate	Educational Attainment Less Than HSG	 High School Grad[a]	 Some College[b]	 Bachelor's Degree or More[c]	Source
Educational Attainment by Occupation of Employed Persons Ages 18 to 64 Years (1995) (Percent Distribution)					Bureau of the Census. *Current Population Reports*, P20-489.
Executive, administrative, managerial	2.5%	17.3%	25.2%	55.0%	
Professional specialty	0.6%	4.1%	13.7%	81.5%	
Technicians and related support	2.0%	20.1%	43.0%	34.8%	
Sales	4.1%	27.8%	30.8%	37.4%	
Administrative support, clerical	5.4%	35.4%	35.3%	23.9%	
Private household	27.8%	27.8%	27.8%	11.1%	
Other service	16.9%	38.5%	32.4%	12.2%	
Farming, forestry, fishing	32.1%	37.8%	18.0%	12.1%	
Precision production, craft, repair	16.2%	47.2%	29.9%	6.7%	
Machine operators, assemblers, inspectors	24.3%	48.8%	22.6%	4.2%	
Transportation, material moving	20.6%	49.7%	23.7%	6.0%	
Handlers, equip cleaners, helpers, laborers	26.2%	50.1%	18.6%	5.1%	
Income, Benefits, Wealth and Expenditures					
Median Income of Persons (1993)					Bureau of the Census. *Current Population Reports*, P60-188.
Total					
Males	$14,550	$21,782	$26,323	$41,649	
Females	$7,187	$11,089	$14,489	$25,246	
Year-Round, Full-Time Workers					
Male	$21,752	$27,370	$32,077	$47,740	
Female	$15,386	$19,963	$23,056	$34,307	
Total Money Income of Families (1993)					Bureau of the Census. *Current Population Reports*, P60-188.
Median	$22,224	$33,674	$40,736	$64,941	
Mean	$28,013	$39,242	$46,526	$80,098	
Money Income of Families (1992) (Percent Distribution within Quintile)					Bureau of the Census. *Current Population Reports*, P60-184.
Lowest Fifth	41.3%	19.1%	13.5%	4.2%	
Second Fifth	29.9%	23.3%	17.9%	8.4%	
Third Fifth	16.0%	24.2%	23.4%	14.7%	
Fourth Fifth	8.7%	21.1%	24.9%	25.3%	
Highest Fifth	4.0%	12.2%	20.4%	47.4%	
Top 5 Percent	0.6%	1.6%	3.6%	15.7%	
Health Insurance Coverage, 25 Years and Over (1995)					Bureau of the Census. *Current Population Reports*, P60-195.
All persons	75.7%	82.3%	85.2%	91.8%	
Poor persons	64.6%	62.0%	64.6%	65.5%	
Health Insurance Coverage (1987-89)					Bureau of the Census. *Current Population Reports*, P70-29.
Government or Private					
For Entire Period	72.8%	74.9%		85.5%	
For Part of the Period	21.0%	21.8%		12.8%	
No Coverage	6.2%	3.3%		1.5%	
Private for Entire Period	48.1%	68.4%		82.6%	

Correlate	Educational Attainment: Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	Source
Spending by Consumer Units (1992)					Bureau of Labor Statistics. *1992 Consumer Expenditures Survey.*
Consumer Units (000)	24,191	29,622	23,499	22,706	
Average Income After Taxes	$17,741	$28,115	$30,639	$48,246	
Average Total Spending	$18,240	$26,924	$31,221	44,237	
Food	$3,231	$4,129	$4,353	$5,340	
Food at Home	$2,403	$2,669	$2,509	$2,950	
Food Away from Home	$828	$1,460	$1,844	$2,391	
Housing	$5,920	$8,340	$9,751	$14,393	
Shelter	$3,159	$4,549	$5,678	$8,658	
Utilities/Public Services/Fuels	$1,693	$2,010	$1,927	$2,318	
Household Operations	$201	$354	$462	$990	
Housekeeping Supplies	$305	$400	$448	$574	
Furnishings/Equipment	$561	$1,027	$1,236	$1,852	
Apparel and Services	$922	$1,397	$1,877	$2,705	
Men's and Boys'	$220	$344	$520	$736	
Women's and Girls'	$341	$564	$743	$1,082	
Children Under 2	$62	$83	$76	$87	
Footwear	$177	$208	$229	$311	
Other Products/Services	$122	$198	$309	$488	
Transportation	$3,207	$5,188	$5,739	$6,901	
Vehicle Purchase (net outlay)	$1,271	$2,269	$2,494	$2,745	
Gasoline and Motor Oil	$749	$1,016	$1,027	$1,101	
Other Vehicle Expenses	$1,052	$1,694	$1,912	$2,507	
Public Transportation	$135	$209	$306	$547	
Health Care	$1,515	$1,521	$1,516	$2,305	
Health Insurance	$689	$733	$650	$833	
Medical Services	$393	$422	$533	$801	
Drugs and Medical Supplies	$432	$346	$333	$402	
Entertainment	$680	$1,338	$1,670	$2,398	
Personal Care	$237	$361	$433	$515	
Reading	$76	$138	$169	$276	
Education	$119	$215	$579	$868	
Alcohol	$149	$252	$366	$441	
Tobacco and Smoking Supplies	$306	$360	$241	$165	
Miscellaneous	$405	$684	$853	$1,155	
Cash Contributions	$393	$634	$905	$2,039	
Personal Insurance/Pensions	$1,081	$2,367	$2,770	$5,006	
Attitude Toward Financial Risk (1983)					Federal Reserve System. *1983 Survey of Consumer Finances.*
Percent Willing to Take Financial Risk	34%	54%	63%	78%	

Correlate	Educational Attainment				Source
	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	
Household Wealth (1991)					Bureau of the Census. *Household Wealth and Asset Ownership: 1991*, Current Population Reports, P70-34.
Median Net Worth	$23,586	$33,254	$31,081	$72,373	
Households Owning Asset Types:					
Interest Earning Assets in Institutions	54.8%	72.1%	78.3%	89.1%	
Other Interest Earning Assets	3.5%	6.1%	8.1%	19.9%	
Regular Checking Accounts	37.0%	47.3%	51.2%	48.6%	
Stocks, Mutual Fund Shares	7.9%	16.7%	22.6%	38.2%	
Own Business or Profession	6.5%	10.9%	12.8%	17.3%	
Motor Vehicles	73.3%	88.2%	90.7%	93.3%	
Own Home	59.5%	65.9%	62.6%	70.7%	
Rental Property	6.2%	7.6%	8.7%	14.5%	
Other Real Estate	7.2%	9.5%	11.5%	15.3%	
Mortgages	1.4%	1.7%	1.9%	3.3%	
U.S. Savings Bonds	8.2%	17.1%	22.3%	25.7%	
IRA/KEOGH Accounts	9.3%	19.2%	22.7%	42.8%	
Other Assets	1.1%	1.7%	2.7%	6.2%	
Median Value Assets for Asset Owners:					
Interest Earning Assets in Institutions	$3,907	$2,860	$2,716	$5,322	
Other Interest Earning Assets	$12,776	$14,773	$17,921	$18,179	
Regular Checking Accounts	$394	$422	$554	$800	
Stocks, Mutual Fund Shares	$8,154	$5,044	$4,151	$7,347	
Equity in Business or Profession	$11,854	$13,239	$6,490	$9,057	
Equity in Motor Vehicles	$3,340	$5,037	$5,260	$7,084	
Equity in Own Home	$39,141	$41,334	$40,772	$55,310	
Rental Property Equity	$17,644	$30,344	$32,581	$44,892	
Other Real Estate Equity	$18,885	$21,335	$25,221	$27,342	
U.S. Savings Bonds	$555	$713	$655	$819	
IRA/KEOGH Accounts	$11,233	$10,338	$10,843	$12,971	
Other Assets	$25,410	$17,031	$15,513	$22,548	
Poverty, Welfare, and Dependency					
Families Below Poverty Level (1994)					Bureau of the Census. *Current Population Reports*, P-60-189.
Total	24.8%	10.9%	7.8%	2.6%	
White	20.6%	8.5%	6.2%	2.1%	
Black	40.1%	26.0%	17.7%	5.1%	
Hispanic	38.0%	20.7%	12.8%	6.4%	
Participation in Government Assistance Programs (1988)					Bureau of the Census. *Current Population Reports*, P70-31.
Average Monthly Participation					
Total	20.5%	7.4%	2.8%		
AFDC, Cash Assistance	5.0%	2.1%	0.6%		
Supplemental Security Income	6.0%	1.3%	0.5%		
Food Stamps	11.6%	3.8%	1.0%		
Housing Assistance	6.7%	2.9%	1.3%		
Medicaid	13.1%	4.2%	1.4%		
Ever Participated in Assistance Programs					
Total	24.3%	10.2%	4.6%		
AFDC, Cash Assistance	6.6%	3.2%	1.0%		
Supplemental Security Income	6.3%	1.4%	0.5%		
Food Stamps	15.0%	5.8%	2.0%		
Housing Assistance	15.7%	5.6%	2.1%		
Medicaid	8.1%	4.0%	1.8%		

	Educational Attainment				
Correlate	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	Source
Mothers Who Receive AFDC and/or Food Stamp Benefits (1993) (% Distribution)					Bureau of the Census. *Statistical Brief*, SB/95-2 and SB/95-22.
AFDC Mothers	44%	38%	19%		
Food Stamp Mothers	41%	40%	19%		
Health and Nutrition					
Life Expectancy (1960) (Years of Life Remaining at Age 25					Kitagwa and Hauser. *Differential Mortality in the United States*. 1973.
White Males	45.6 yrs	46.0 yrs	47.1 yrs		
White Females	53.4 yrs	52.2 yrs	56.4 yrs		
Women's Health Practices (1990)					National Center for Health Statistics. *Health Promotion and Disease Prevention, United States 1990, Vital and Health Statistics*.
Age 18 Years and Over					
Had Professional Breast Exam	43.0%	52.2%	59.7%		
Knew How to do Breast Self-Exam	76.0%	89.7%	92.8%		
Did Breast Self-Exam Monthly	43.9%	43.6%	42.2%		
Had a Pap Smear	37.9%	49.6%	57.2%		
Age 35 Years and Over					
Ever Had a Mammogram	44.9%	59.0%	65.5%		
Had Mammogram in Past 3 Years	37.4%	51.8%	58.5%		
Personal Health Practices (1990)					National Center for Health Statistics. *Health Promotion and Disease Prevention, United States 1990, Vital and Health Statistics*.
Eats Breakfast Almost Every Day	58.6%	52.6%	58.8%		
Rarely Snacks	26.9%	24.0%	26.4%		
Exercised/Played Sports Regularly	25.9%	37.0%	52.1%		
Had Two or More Drinks on Any Day	5.1%	5.9%	5.4%		
Current Smoker	31.8%	29.6%	18.3%		
20%/More Above Desirable Weight	32.7%	28.6%	23.8%		
Customers for Vitamin Supplements (1992)	34%	39%	41%	47%	Louis Harris & Associates, for *Prevention* magazine.
Felt A Lot or Moderate Stress in Last 2 Weeks (1993)					National Center for Health Statistics. *National Health Interview Surveys*.
1993	43%	55%	62%	64%	
1990	43%	56%	65%	67%	
1985	39%	50%	60%	65%	
Trends in Percent of Babies Breastfed at All, by Year of Birth and Educational Level of Mother (1970-87)					Centers for Disease Control and Prevention, National Center for Health Statistics. *National Survey of Family Growth, 1973, 1976, 1982 and 1988.*
1970-71	17.9%	18.5%	39.9%		
1972-73	15.5	20.4	39.1		
1974-75	18.1	31.0	50.7		
1976-77	25.6	35.3	62.3		
1978-79	25.3	41.4	55.0		
1980-81	32.1	44.9	73.4		
1982-83	30.5	53.6	73.7		
1984-85	32.9	46.8	74.7		
1986-87	31.2	49.2	72.8		

	Educational Attainment				
Correlate	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	Source
Trends in Awareness of a Link between Sodium Intakes and Hypertension (1978-90)					Food and Drug Administration, Consumer Studies Branch. *Health and Diet Survey.*
1978	10%	13%	19%		
1982	34	39	48		
1986	37	43	53		
1988	36	47	57		
1990	27	39	51		
Trends in Awareness of a Link between Fiber Intakes and Cancer (1978-90)					
1978	1%	3%	8%		
1983	1	5	15		
1986	18	27	41		
1988	15	21	36		
1990	9	14	30		
Foods Adults Believe They Should Eat or Drink More of to Help Prevent Cancer (1987)					National Institutes of Health, National Cancer Institute. *National Health Interview Survey Cancer Risk Factors Supplement.* 1987.
Vegetables	40.7%	43.4%	48.0%		
Whole grains and fiber	12.8	23.3	37.6		
Fruit	19.6	23.6	27.7		
Lower fat meals	9.1	10.0	11.2		
Foods Adults Believe They Should Eat or Drink Less of to Help Prevent Cancer (1987).					
Higher fat meals	22.4%	26.4%	31.2%		
Fats	21.4	26.0	31.6		
Alcohol	12.4	11.8	13.0		
Sweets and snacks	8.6	10.3	11.6		
Additives	4.6	8.4	11.4		
Wearing Seatbelts While Driving Intoxicated (1990)					American Journal of Public Health.
Below Legal Level of Intoxication	39%	41%	51%	66%	
Above Legal Level of Intoxication	15%	20%	31%	78%	
Personal Life					
Education Participation of Population 17 Years and Over During Previous 12 Months (1994-95)					National Center for Education Statistics. *1995 Household Education Survey.*
Participation Rate	15.7%	30.7%	49.7%	58.2%	
Reasons for Taking Course:					
Personal/Social	47%	44%	44%	43%	
Advance on the Job	25%	49%	52%	65%	
Train for a New Job	9%	10%	14%	9%	
Complete Degree or Diploma	15%	6%	12%	9%	

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Correlate	Educational Attainment				Source
	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	
Employer Involvement in Adult Education (1991)					National Center for Education Statistics. *Participation in Adult Education*, unpublished data.
Any employer involvement	35%	62%	76%	71%	
Given at place of work	17%	31%	47%	34%	
Employer paid some portion	21%	50%	66%	57%	
Employer provided course	19%	36%	51%	44%	
Employer required course	21%	31%	39%	30%	
Employer provided time off	19%	45%	63%	56%	
Number of adult education courses taken in last year (Percent distribution)					
One	72%	47%	32%	33%	
Two or three	17%	32%	40%	39%	
Four or more	8%	18%	25%	26%	
Multimedia Audiences (1996)					Mediamark Research, Inc. *Multimedia Audiences*.
Television Viewing	92.0%	92.5%	90.3%	88.1%	
Television Prime Time Viewing	77.1%	78.3%	73.6%	71.3%	
Cable Viewing	48.1%	65.6%	69.6%	69.4%	
Radio Listening	72.9%	82.5%	88.4%	88.0%	
Newspaper Reading	65.9%	80.8%	86.6%	90.9%	
Internet Access	1.4%	3.4%	11.9%	23.4%	
Choose Among Three or Fewer Restaurant Chains When Eating Out (1992)	50%	56%	60%	50%	Roper Organization.
Fishermen and Hunters (1991) (Percent Distribution					Bureau of the Census and Fish and Wildlife Service. *1991 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.*
Fishing	17%	38%	22%	24%	
Hunting	18%	44%	21%	16%	
Participation in Leisure Activities at Least Once in Prior 12 Months (1992)					National Endowment for the Arts. *Arts Participation in America, 1982 to 1992.*
Exercise Program	39%	55%	71%	75%	
Playing Sports	18%	34%	49%	55%	
Camping, Hiking or Canoeing	21%	31%	42%	42%	
Home Improvement/Repair	34%	47%	53%	52%	
Reading Literature	32%	49%	65%	71%	
Attendance at Various Arts Activities at Least Once in Prior 12 Months (1992)					National Endowment for the Arts. *Arts Participation in America, 1982 to 1992.*
Jazz Performance	2%	6%	14%	20%	
Classical Music Performance	3%	7%	14%	23%	
Opera	1%	1%	3%	6%	
Musical Play	5%	12%	21%	30%	
Non-musical Play	4%	8%	16%	23%	
Ballet	1%	2%	6%	9%	
Art Museums	7%	16%	35%	46%	
Historic Park	15%	26%	43%	52%	
Movies	35%	54%	21%	77%	
Sports Events	19%	33%	45%	51%	
Amusement Park	35%	51%	59%	58%	

Correlate	Educational Attainment				Source
	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	
Participation in Various Arts Activities at Least Once in Prior 12 Months (1992)					National Endowment for the Arts. *Arts Participation in America, 1982 to 1992.*
Playing Classical Music	1%	2%	6%	8%	
Modern Dancing	4%	8%	10%	9%	
Pottery Work	5%	8%	12%	9%	
Needle-work	24%	25%	26%	24%	
Photography	4%	9%	15%	18%	
Painting	3%	9%	13%	12%	
Creative Writing	2%	4%	11%	14%	
Buying Art Work	8%	15%	27%	39%	
Music Preferences (1992)					National Endowment for the Arts.
Country/Western	53.5%	57%	50%	44%	
Mood/Easy Listening	26.5%	49%	56%	58%	
Rock	19.5%	42%	54%	53.5%	
Blues/Rhythm & Blues	20%	36%	50%	54.5%	
Big Band	21.5%	32%	37%	48%	
Jazz	12.5%	28%	42%	52%	
Classical	14%	25%	39%	58%	
Show Tunes/Operetta/Musicals	9.5%	22%	33%	45.5%	
Contemporary Folk	11%	20%	25%	34%	
Opera	5.5%	9%	14%	21%	
Book Purchasing (1992) (% Distribution)					Book Industry Study Group. *1991-92 Consumer Research Study on Book Purchasing.*
Total	8.2%	52.4%	39.4%		
Mass Market (pocket size, mass merch)	11.6%	60.3%	28.1%		
Trade (all other paperbound books)	5.0%	44.2%	50.8%		
Hardcover	6.2%	49.4%	44.4%		
Gun Ownership (1993)					Bureau of Justice Statistics. *Sourcebook of Criminal Justice Statistics.*
Total	47%	46%	38%		
Pistol	18%	25%	24%		
Shotgun	30%	32%	22%		
Rifle	27%	27%	20%		
Consumer Purchases of Sporting Goods (1994) (% Distribution)					National Sporting Goods Association. *The Sporting Goods Market in 1995.*
Aerobic Shoes	4.8%	20.8%	36.9%	37.5%	
Gym Shoes/Sneakers	5.8%	26.6%	34.4%	33.2%	
Jogging/Running Shoes	5.0%	14.7%	31.6%	48.7%	
Walking Shoes	6.6%	24.8%	34.8%	33.8%	
Fishing Tackle	9%	26%	39%	27%	
Camping Equipment	5%	19%	36%	39%	
Exercise Equipment	4%	18%	37%	40%	
Hunting Equipment	7%	25%	40%	27%	
Team Sports Equipment	4%	18%	32%	44%	
Golf Equipment	2%	13%	32%	53%	
Family Life					
Women Who Have Had a Child in the Last Year Who Were Unmarried (1994)	45.6%	30.3%	19.0%	6.1%	Bureau of the Census. *Current Population Reports*, P20-482.

Correlate	Educational Attainment				Source
	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	
Women Who Have Had a Child in the Last Year (1994) (births per 1000)					Bureau of the Census. *Current Population Reports*, P20-482.
Women 15 to 44 Years Old					
Total Births per 1000 Women	67.3	70.3	56.2	70.3	
First Births per 1000 Women	28.3	28.1	24.9	31.4	
Women 15 to 29 Years Old					
Total Births per 1000 Women	76.4	116.7	77.0	65.6	
First Births per 1000 Women	38.0	60.0	45.9	40.8	
Women 30 to 44 Years Old					
Total Births per 1000 Women	45.5	39.3	38.8	73.1	
First Births per 1000 Women	5.2	6.9	7.1	25.8	
Lifetime Births Expected by Women Ages 18 to 34 Years (1992)					Bureau of the Census. *Current Population Reports*, P20-470.
Rate per 1000 Women					
Births to date	1776	1325	887	644	
Future births expected	616	718	1171	1389	
Lifetime births expected	2393	2043	2058	2033	
Percentage expecting:					
No lifetime births	7.6%	9.0%	9.7%	10.6%	
No future births	63.8%	57.9%	40.2%	30.1%	
Women Who Have Had a Child in the Last Year and Their Percent in the Labor Force (1994)	33.5%	48.1%	63.3%	69.7%	Bureau of the Census. *Current Population Reports*, P20-482.
Birthing Center Utilization (1985-87) (Percent Distribution)					*New England Journal of Medicine*, December 28, 1989.
Births at Birth Centers	12.4%	32.3%	23.5%	31.8%	
All Births	15.5%	43.7%	22.1%	18.7%	
Living Arrangements of Children Under 18 Years by Parental Educational Attainment (1993)(Percent Distribution)					Bureau of the Census. Unpublished data.
All Races	18.0%	34.6%	25.1%	22.3%	
Living with Both Parents	13.9%	33.1%	25.5%	27.4%	
Living with Mother Only	29.1%	38.3%	24.5%	8.2%	
Living with Father Only	25.4%	40.1%	20.6%	13.9%	
White	16.6%	33.7%	25.6%	24.2%	
Living with Both Parents	13.6%	32.9%	25.9%	27.9%	
Living with Mother Only	27.8%	35.8%	26.4%	10.0%	
Living with Father Only	25.4%	39.8%	21.2%	13.8%	
Black	25.1%	42.2%	23.6%	9.1%	
Living with Both Parents	16.2%	41.0%	27.9%	17.3%	
Living with Mother Only	30.9%	43.1%	21.0%	5.0%	
Living with Father Only	26.1%	41.9%	18.9%	12.4%	
Hispanic	51.9%	26.6%	15.1%	6.4%	
Living with Both Parents	50.8%	25.6%	15.9%	7.7%	
Living with Mother Only	54.1%	29.4%	13.2%	3.4%	
Living with Father Only	53.7%	23.3%	15.9%	7.1%	

Correlate	Educational Attainment				Source
	Less Than HSG	High School Grad[a]	Some College[b]	Bachelor's Degree or More[c]	
Primary Child Care Arrangements Used by Employed Mothers for Preschool Children (1993) (Percent Distribution by Mother's Education)					Bureau of the Census. *Current Population Reports*, P70-53.
Care in Child's Home	41.6%	31.1%	28.6%	28.2%	
Care in Another Home	31.4%	35.6%	30.4%	29.1%	
Day/Group Care Center	11.0%	16.9%	19.6%	22.0%	
Nursery/Pre-school	9.1%	9.7%	12.5%	14.0%	
Mother Cares for Child	5.8%	5.7%	7.6%	5.5%	
Other Arrangements	0.8%	1.1%	1.3%	1.2%	
Married Fathers Caring for Their Children (1993)					*National Survey of Families and Households.*
3 Hours Per Day Caring for Preschooler	36%		22%		
Play with Children Almost Every Day					
Oldest Child Younger than 5	77%		79%		
Oldest Child 5 to 18	18%		16%		
Help Children Learn Almost Every Day					
Read to Children Under 5	17%		36%		
Help with Homework Oldest 5 to 18	45%		61%		
Praise Children Very Often					
Oldest Child Younger than 5	77%		85%		
Oldest Child 5 to 18	46%		61%		
Yell at the Children Sometimes or Often					
Oldest Child Younger than 5	49%		47%		
Oldest Child 5 to 18	58%		57%		
Child Support Payments Agreed to or Awarded All Custodial Parents (1991)					Bureau of the Census. *Current Population Reports*, P60-187.
Child Support Agreed to or Awarded	32.7%	55.7%	63.5%	66.5%	
Supposed to Receive Child Support	84.8%	87.5%	86.6%	81.6%	
Received Payments in 1991	68.5%	76.2%	72.9%	84.3%	
Received Full Payments	65.5%	66.7%	70.9%	71.1%	
Received Partial Payments	34.3%	33.3%	29.1%	28.9%	
Did Not Receive Payments	31.6%	23.8%	27.1%	15.7%	
Mean Money Income and Child Support Received by Custodial Parents					
Mean Total Money Income	$8,919	$15,558	$21,311	$34,397	
Total Mean Income from Child Support	$1,720	$2,553	$3,242	$4,666	
Absentee Fathers Visits to Child (1993)					*National Survey of Families and Households.*
None	21.7%		20.0%		
One to Several Times per Year	23.2%		32.2%		
One to Several Times per Month	24.2%		16.5%		
One or More Times per Week	27.3%		27.2%		
Performance of Children in School					
Average Science Scores on the National Assessment of Educational Progress (1994)					National Center for Education Statistics. *NAEP 1994 Trends in Academic Progress.*
Age 9	211	225	239	239	
Age 13	234	247	260	269	
Age 17	256	279	295	311	

	Educational Attainment				
Correlate	**Less Than HSG**	**High School Grad[a]**	**Some College[b]**	**Bachelor's Degree or More[c]**	**Source**
Average Mathematics Scores on the National Assessment of Educational Progress (1996)					National Center for Education Statistics. *NAEP 1996 Mathematics.*
Grade 4	205	219	232	232	
Grade 8	254	261	279	282	
Grade 12	282	294	302	314	
Average Reading Scores on the National Assessment of Educational Progress (1994)					National Center for Education Statistics. *NAEP 1994 Trends in Academic Progress.*
Age 9	189	207	221		
Age 13	237	251	269		
Age 17	268	276	299		
Average Writing Scores on the National Assessment of Educational Progress (1994)					National Center for Education Statistics. *NAEP 1994 Trends in Academic Progress.*
Grade 4	188	202	212	212	
Grade 8	250	259	270	275	
Grade 12	269	279	286	293	
Community Life					
Volunteer Work (1993)					Independent Sector survey, 1994.
Doing Volunteer Work	29.9%	40.4%	56.9%	67.2%	
Average Hours Volunteered per Week		3.6 hrs	4.3 hrs	5.0 hrs	
Volunteer Work (1989) (% Distribution)	8.3%	18.8%	28.1%	38.4%	Bureau of Labor Statistics. *News*, USDL-90-154.
Churches, Other Religious Organizations	48.4%	41.5%	36.8%	32.9%	
Schools, Educational Organizations	6.6%	12.5%	14.7%	17.4%	
Civic, Political Organizations	10.0%	11.2%	13.3%	16.4%	
Hospitals, Health Organizations	10.0%	11.1%	10.8%	9.7%	
Social, Welfare Organizations	13.1%	8.8%	10.1%	10.1%	
Sport, Recreational Organizations	4.8%	8.2%	8.0%	7.8%	
Other Organizations	7.0%	6.7%	6.3%	5.7%	
Registered to Vote (1992)					Bureau of the Census. *Current Population Reports*, P-20-466.
Total	50.4%	64.9%	75.4%	84.8%	
Voted in Presidential Election (1992)					Bureau of the Census. *Current Population Reports*, P-20-466.
Total	41.2%	57.5%	68.7%	81.0%	
Political Party Identification (1994)					Center for Political Studies, University of Michigan.
Strong Democrat	26%	15%	14%		
Weak Democrat	26%	22%	16%		
Independent Democrat	7%	14%	13%		
Independent	13%	13%	7%		
Independent Republican	7%	10%	13%		
Weak Republican	11%	13%	16%		
Strong Republican	6%	11%	21%		
Apolitical	4%	1%	0%		

	Educational Attainment				
Correlate	**Less Than HSG**	**High School Grad[a]**	**Some College[b]**	**Bachelor's Degree or More[c]**	**Source**
Trends in Voting for Congressional Representatives (1994 and 1996)					Voter News Service, in New York Times, 11/7/96.
Democrat					
1994	58%	47%	41%	45%	
1996	65%	55%	50%	43%	
Republican					
1994	42%	53%	59%	55%	
1996	35%	45%	50%	57%	
Mobility (1994) (Percent of Total moved in previous year)					Bureau of the Census. *Current Population Reports*, P20-485.
Live in same house	86.1%	86.4%	84.9%	85.0%	
Moved, live in same county	72.2%	64.9%	61.1%	54.1%	
Moved, different county in same state	52.1%	57.7%	56.4%	50.0%	
Moved, different state in same region	60.6%	55.1%	54.6%	48.9%	
Moved, different state in different region	39.6%	44.9%	45.4%	51.1%	
Influential Community Leadership (1992) (Percent Distribution)					The Roper Organization.
Influentials	5%	22%	29%	44%	
General Public	20%	37%	23%	19%	
Crime and Punishment					
State Prison Inmates (1991) (Percent Distribution)	41.2%	58.8%			Bureau of Justice Statistics. *Profile of State Prison Inmates, 1991*.
Prisoners Under Sentence of Death (1994) (Percent Distribution)	52.4%	37.4%	10.2%		Bureau of Justice Statistics. *Capital Punishment*.

[a] High school graduates include equivalency certification.

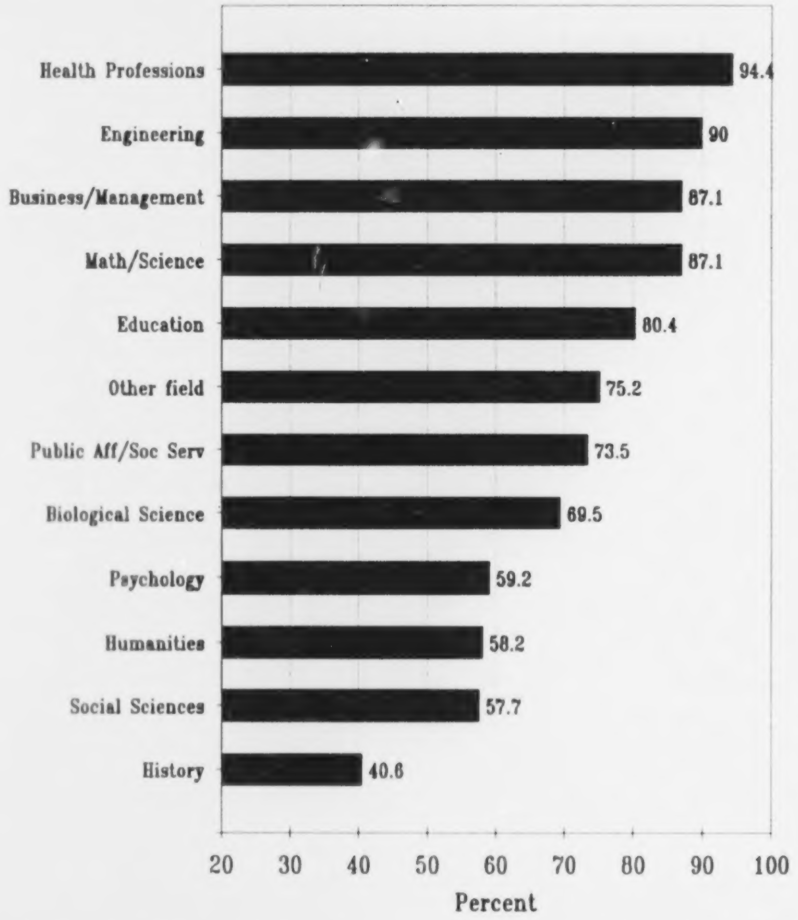
[b] Some college includes those with some college but no degree, and those with associate degrees from occupational and academic programs.

[c] Bachelors degree or more includes bachelor, master, professional and doctoral degrees.

An indicator from . . . . . . the Condition of Education

Transition from College to Work

Job Related to Field of Study
for 1992-93 Bachelor's Degree Recipients by Field
April 1994



There exists a long history of research on the relationship between college and the world of employment.

College freshmen continue to report that a very important reason for attending college is "to get a better job." In the 1996 survey of American college freshmen conducted by the Higher Education Research Institute at UCLA, this was the most frequently cited very important reason for attending college:

Get a better job	*76.7%*
Learn more about things	*74.3%*
Make more money	*72.4%*
Gain general education	*62.1%*
Improve reading/study skills	*42.8%*
Prove that could succeed	*39.5%*
Become more cultured person	*38.0%*
Parents wanted me to go	*37.8%*
To get away from home	*17.4%*
Role model encouraged me	*14.3%*
Could not find a job	*6.9%*
Nothing better to do	*3.4%*

This question has been asked on the freshman survey since 1971, when 77.0 percent of all freshmen said this was a very important reason for attending college. Thereafter, the proportion has ranged between about 72 and 82 percent, and usually ranked first in importance.

Economist Richard Freeman has reported extensively on college student enrollment behavior and the post-college labor market. In particular, Freeman reported that across many fields and levels of collegiate study, student enrollments shifted directly with changes in the labor market demand for college-trained workers.

Moreover, as repayable educational loans grow in importance helping students finance their higher educations, the prospect of employment to repay those loans also grows in importance. If students are to be expected to begin repaying their educational loans soon after leaving college, then clearly they need to be aware of their employment prospects.

Here we examine one small but particularly insightful set of findings from a federal study of 1992-93 bachelor degree graduates as of April 1994. The results highlight large differences across fields of study in employment compared to education, in the college-level education that graduates from different fields found in their jobs, and in the career potential graduates found in these jobs.

The Data

Data reported here are from a

summary of the first follow-up from the 1993 Baccalaureate and Beyond Longitudinal Study. This follow-up was conducted in April 1994. The study was conducted under the auspices of the National Center for Education Statistics.

As of the first follow-up date, graduate status was classified into five categories:

- Employed full-time, not enrolled
- Employed part-time, not enrolled
- In labor force, enrolled
- Not in labor force, enrolled
- Not employed, not enrolled

These data constitute Indicator 31 in the 1996 Condition of Education:

Smith, T. M., and others. (1996.) *The Condition of Education 1996.* U.S. Department of Education, National Center for Education Statistics. NCES 96-304. Washington, DC: U.S. Government Printing Office.

The Findings

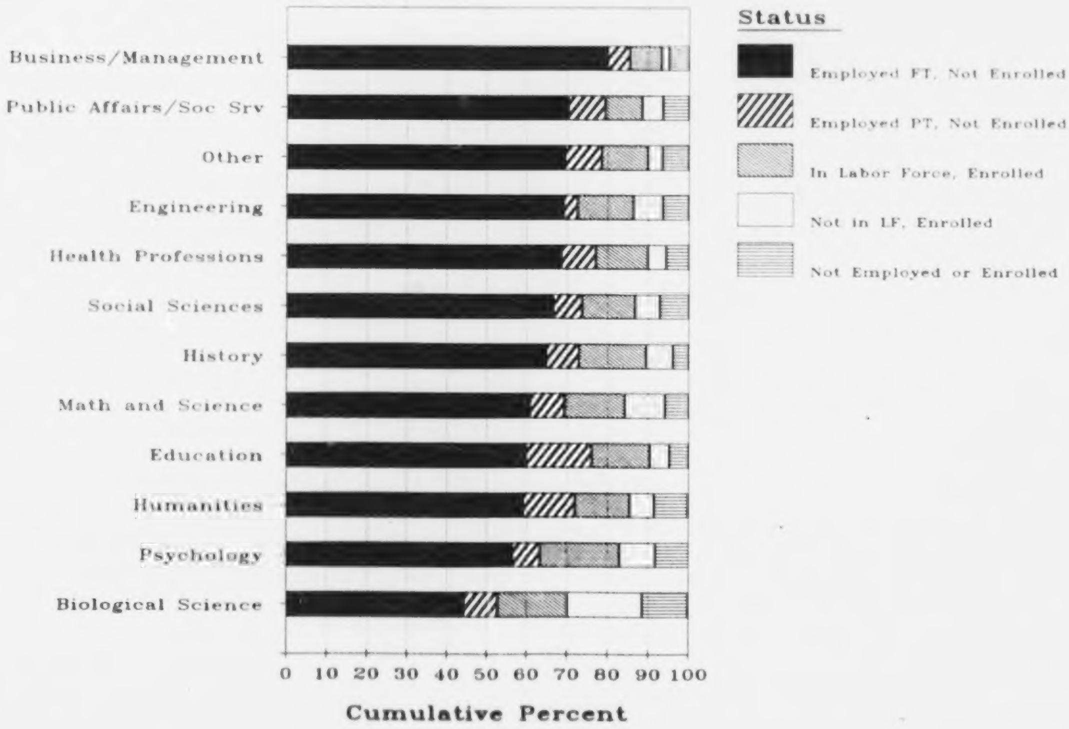
By April 1994 67.1 percent of the 1992-93 bachelor degree recipients were employed full-time and were not enrolled in college, and another 8.7 percent were employed part-time and not enrolled. Many continued their collegiate studies: 12.4 percent were in the labor force and an additional 5.5 percent were not. Finally, 6.3 percent were neither enrolled nor employed.

Those most likely to be employed and not enrolled were in business/management, public affairs/social service, health professions, education, and other fields of study. Those most likely to be enrolled in April 1994 were in biological science, psychology, math and science, and humanities.

Of those who were employed full-time and not enrolled, 94.4 percent whose field was health professions reported that their job was related to their field of study. At the other extreme, 40.6 percent of the history majors reported that their job was related to their field of study, as shown in the chart on page 18. Those whose academic field was occupationally focused were most likely to find employment in their field, while liberal arts graduates were least likely.

Of those employed full-time and not enrolled, those in engineering were most likely to report that their job

Status of 1992-93 Bachelors Degree Recipients by Field of Study, April 1994



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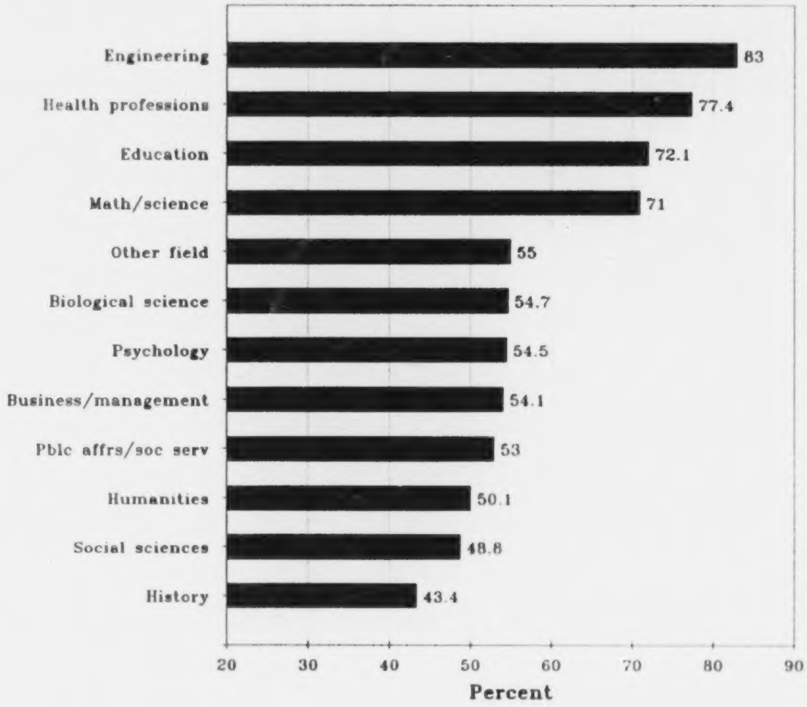
required a college degree--83 percent. Other fields where the job graduates held was most likely to require a college degree were health professions, education and math/science.

At the other extreme, just 43.4 percent of the history majors reported that their current job required a college degree. Surprisingly, 55 percent or less of those in the employed in the following fields of study reported that the job they held required a college degree: biological science, psychology, business/management, public affairs/social services, humanities, social sciences and history.

Career potential was another measured outcome. Engineering and health professions majors were most likely to report that their job had career potential, at about 85 percent. Just 54 percent of psychology majors and 62 percent of biological science majors reported that their jobs had career potential.

Job Required College Degree
for 1992-93 Bachelor's Degree Recipients by Field
April 1994



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The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 62 **Oskaloosa, Iowa** **August 1997**

Better for some groups . . . . . . than for others

College Continuation Rates for Recent High School Graduates Reached Record High in 1996

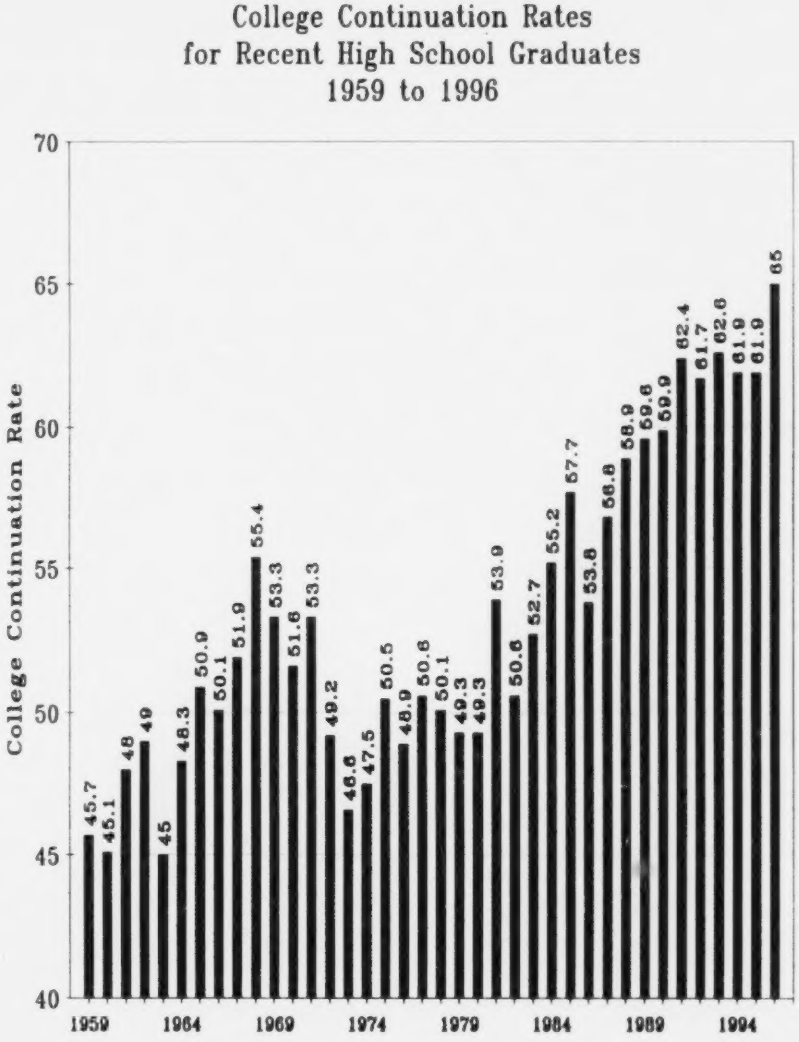
During the 1995-96 school year, 2,660,000 students graduated from U.S. high schools. By October of 1996 1,729,000 of them were enrolled in college. This college continuation rate of 65.0 percent was the highest on record, and almost certainly the highest ever in the U.S.

The record follows an overall pattern of growth from about 45 percent in 1960. The growth in the college continuation rate, from 45 to 65 percent between 1960 and 1996, added about 532,000 students to college freshmen enrollment compared to the 1960 rate.

Between 1995 and 1996, the college continuation rate for recent high school graduates increased from 61.9 to 65.0 percent. From 1991 through 1995 the rate had been stuck at about 62 percent. The increase was about three percent, but varied sharply for different groups:

- By gender, the college continuation rate *increased* by 8.3 percent for females, but *decreased* by 2.5 percent for males.
- By race/ethnicity, the rate increased by 3.2 percent for whites, and by 3.9 percent for blacks. However, the rate *decreased* by 3.1 percent for Hispanics.

Nearly half of these continuing freshmen were in the labor force. About 40 percent were working, a share similar to the proportion of freshmen working since the mid-1980s. The unemployment rate of college freshmen in the labor force was 15.7 percent, and has been rising steadily since 1989 when it stood at 8.9 percent.



These and many other important findings are derived from a report

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recently released by the Bureau of Labor Statistics.

The Data

The data analyzed for this report were collected in the October 1996 Current Population Survey (CPS). This survey is administered by the Census Bureau. Data collected in the CPS are used to compile, among other things, national monthly unemployment rates. The October CPS contains an education supplement that presents an opportunity to collect data on both educational participation as well as labor force participation.

"College Enrollment and Work Activity of 1996 High School Graduates." July 1996. *News*. USDL 97-240. Washington, DC: United States Department of Labor, Bureau of Labor Statistics.

We are grateful to Sharon Cohany, economist at the Bureau of Labor Statistics, for sharing the release of these data. She can be reached at (202) 606-6378, in Washington.

These data are especially helpful in understanding many important issues, including high school attrition/graduation, continuation into higher education, working while enrolled in college, etc. The data are disaggregated by important demographic descriptors (gender, race/ethnicity), by school type (2-year/4-year, and by enrollment status (full-time/part-time). Of great importance to analysis over time is that these data have been reported in a similar format since 1959.

Our analysis of these data here touches only briefly on a few of the many transitions documented in the BLS report. This focuses on the transition from high school to college. Equally important transitions reported by BLS but not analyzed here include high school attrition, and labor force participation and assimilation of those leaving high school (either as graduates or drop-outs).

Demographics

High school graduates. Between October 1995 and October 1996, about 3,156,000 people ages 16 to 24 years left high school. Of these, 2,660,000, or 84.3 percent of the total, were high school graduates. The remaining 496,000, or 15.7% of the total, were dropouts. That is, they left high school without a diploma or equivalency (GED) certificate.

The number of high school graduates has risen nearly every year since 1991 when 2,276,000 high school graduates were counted. The increase between 1991 and 1996 was 384,000, or nearly 17 percent. The echo of the post-World War II baby boom has been arriving at high school graduation and college admissions for about 5 years now. However, the volume of that echo also has distinctive regional ranges with far greater volume in growth states than in states that are not growing.

Detailed racial-ethnic data on high school graduates has been collected and reported since 1976. In 1996 78.6 percent of the total were white, 15.6 percent were black and 8.5 percent were Hispanic. This sums to more than 100 percent because Hispanics may be of any race. If Hispanics are assumed to be all white, then the mutually exclusive classifications of the total were: non-Hispanic whites were 70.1 percent of the total, blacks were 15.6 percent, Hispanics were 8.5 percent, and those of other race (mainly Asians) were 5.7 percent.

During the last two decades, the racial-ethnic composition of the high

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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school graduating class has made some pronounced shifts. The distribution of these mutually-exclusive racial-ethnic categories in 1976 and 1996 was as follows:

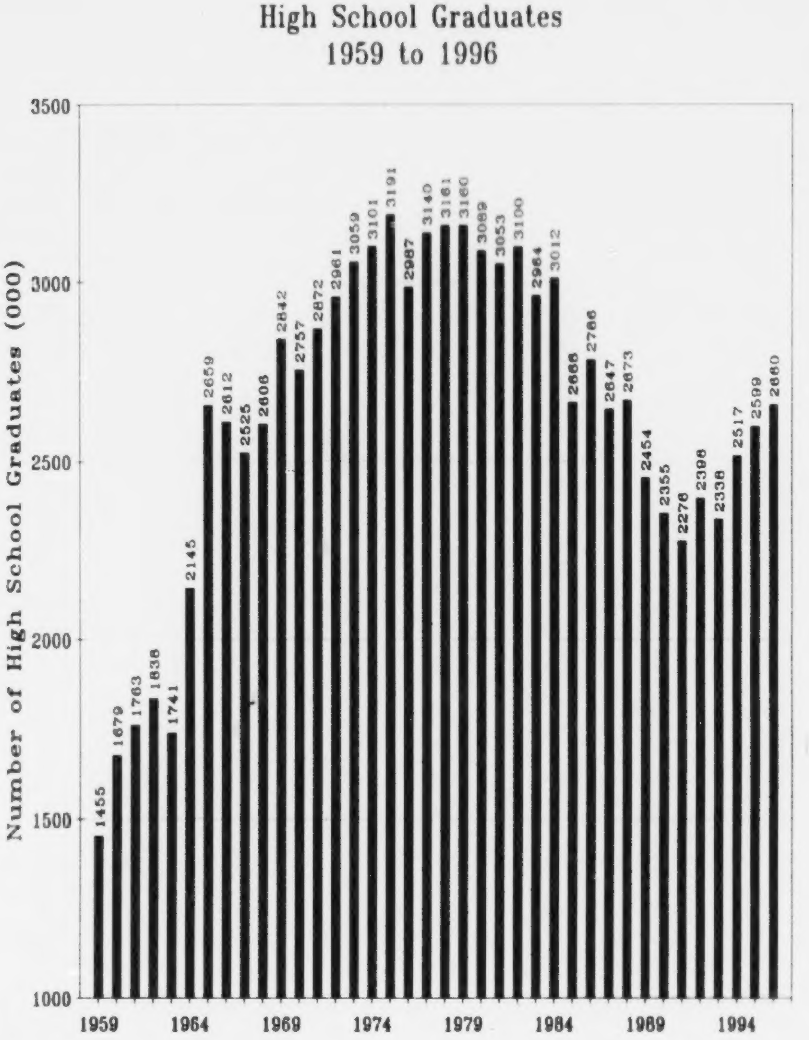
	1976	1996
Non-Hisp white	83.3%	70.1%
Black	10.7%	15.6%
Hispanic	5.1%	8.5%
Other race	0.9%	5.7%

Clearly, American high school graduates have become notably less white and notably more everything else during the last two decades.

College freshmen. While the numbers of college freshmen has taken wild swings corresponding closely to fluctuations in the numbers of live births 18 years earlier, the number of college freshmen who were recent high school graduates remained relatively stable at roughly 1.5 million from the late 1960s through about 1995.

However, the fall 1996 freshman class of 1995-96 high school graduates jumped substantially above this range, to 1,729,000. This was the largest freshman class on record.

The relatively stable numbers of college freshmen for the last 25 years--much of the period characterized by substantial declines in the numbers of high school graduates--resulted from huge growth in the *rate* at which high school graduates continued their education on into college. This will be discussed in more detail shortly. But what is significant here is that the sharp increase in the numbers of college freshmen in 1996 results from the combined effects of both growth in *numbers* of high school graduates and the *rate* at which they continued their educations on into college immediately following high school graduation.



College enrollment--unlike high school enrollment--requires conscious decisions on the part of the student to seek collegiate study. This non-compulsory, voluntary and expensive decision is pursued differentially by different segments of the population. For example, between 1976 and 1996 the numbers of college freshmen by gender changed as follows:

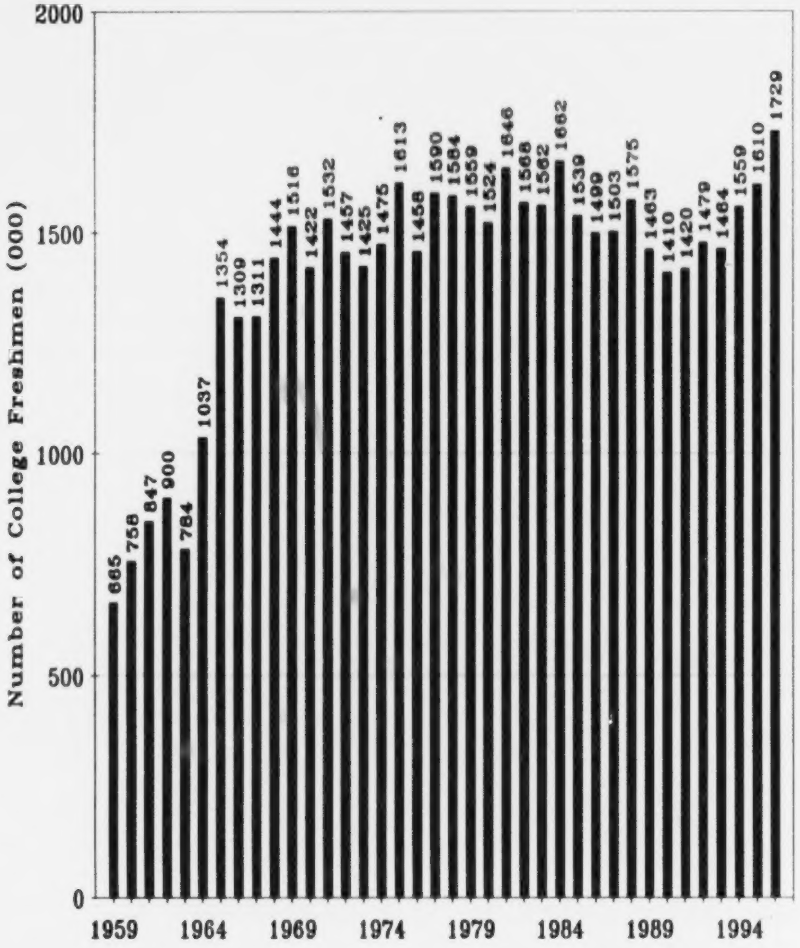
	Numbers (000)		
	1976	1996	Change
Males	685	779	+13.7%
Females	773	950	+22.9%

These changes apply to the mutually-distinct racial-ethnic groups as well:

	Numbers (000)		
	1976	1996	Change
Non-His Whi	1211	1262	+4.2%
Black	134	230	+71.6%
Hispanic	80	115	+43.8%
Other race	33	122	+269.7%

Expressed another way, the composition of the freshman class shifted from 47%/53% male/female in 1976 to 45/55 by 1996. By race-ethnicity, the share of freshmen who were non-Hispanic whites dropped from 83 to 73 percent, while the proportion of freshmen that were black

College Freshmen Who Were Recent High School Graduates 1959 to 1996



increased from 9 to 13 percent, from 5 to 7 percent for Hispanics, and from 2 to 7 percent for those of other race (mainly Asians).

Other findings reported by the BLS were:

- By status, 92 percent of the freshmen were enrolled in college on a full-time basis, with just 8 percent part-time.
- By institutional type, 64 percent were enrolled in 4-year colleges, with the balance of 36 percent enrolled in 2-year colleges.

Rates of Participation

Students *choose* to continue their educations in college after high school. This choice is not without many important influences, both characteristics of the student as well as external influences acting on the student. Here, we are less concerned about these influences than we are their bottom-line effect as measured by the rate at which recent high school graduates have enrolled in college.

In October of 1996 65.0 percent of the 1995-96 high school graduates were enrolled in college. This rate is the highest on record since these data were first collected in 1959.

The college continuation rates for each year between 1959 and 1996 are shown in the chart on page 1 of this issue of OPPORTUNITY. Over the last nearly four decades, the proportion of high school graduates enrolling in college the following fall has increased from about 45 to 65 percent.

Until 1996 the college continuation rate had been flat throughout most of the 1990s. Between 1991 and 1995 the rate had been stuck at close to 62 percent, following a nearly steady year-after-year increase since the early 1970s. The annual increases between 1973 and 1991 were not surprising: the wage differential between high school-educated and college-educated workers had been growing, steadily, improving the benefits from a college education.

The stagnation of the college participation rate between 1991 and 1995 was disappointing, but not surprising. While those with bachelor's degrees continued to earn substantially more than did those with high school diplomas, this income differential also stagnated, at least for males.

- In 1991 the median income of males with bachelors degrees was 67 percent greater than those with high school diplomas. By 1995 the differential remained at 67 percent.
- For females in 1991, those with bachelor's degrees had median incomes that were 93 percent more than those of other females with high school diplomas. By 1995 this differential was 100 percent.

Until 1996 income data become available, the reason for the 1996 uptick remains to be explained.

The increase in the rate of college

continuation has direct and measurable impacts on the numbers of recent high school graduates continuing their educations in college the following fall. Of the total increase in college freshmen between 1995 and 1996 of 119,000 students:

- 82,000 resulted from the increase in the college continuation rate.
- 37,000 resulted from the increase in the size of the high school graduating class in 1996 compared to 1995.

Gender. There may be few features of these data that are more striking than the changes in differences of college continuation rates between males and females.

- Between 1959 and 1996, the college continuation rate for male high school graduates increased by 5.9 percent, from 54.2 to 60.1 percent.
- During this same period, the rate for females increased by 31.1 percent, from 38.6 to 69.7 percent.

Truly, the Martians and the Venusians appear to be living in different worlds.

The male college continuation rate has primarily fluctuated over the last nearly four decades, from a peak of 63.2 percent in 1968 during the Vietnam War, to a low of 46.7 percent in 1980. The rate for 1996 of 60.1 percent is down from 62.6 percent a year earlier. The data in this time-series--shown in the chart on this page--suggest that young males are especially stimulated to enroll in college during war, when young males are being conscripted for military service in that war and an exemption from that conscripted service is available for full-time collegiate enrollment.

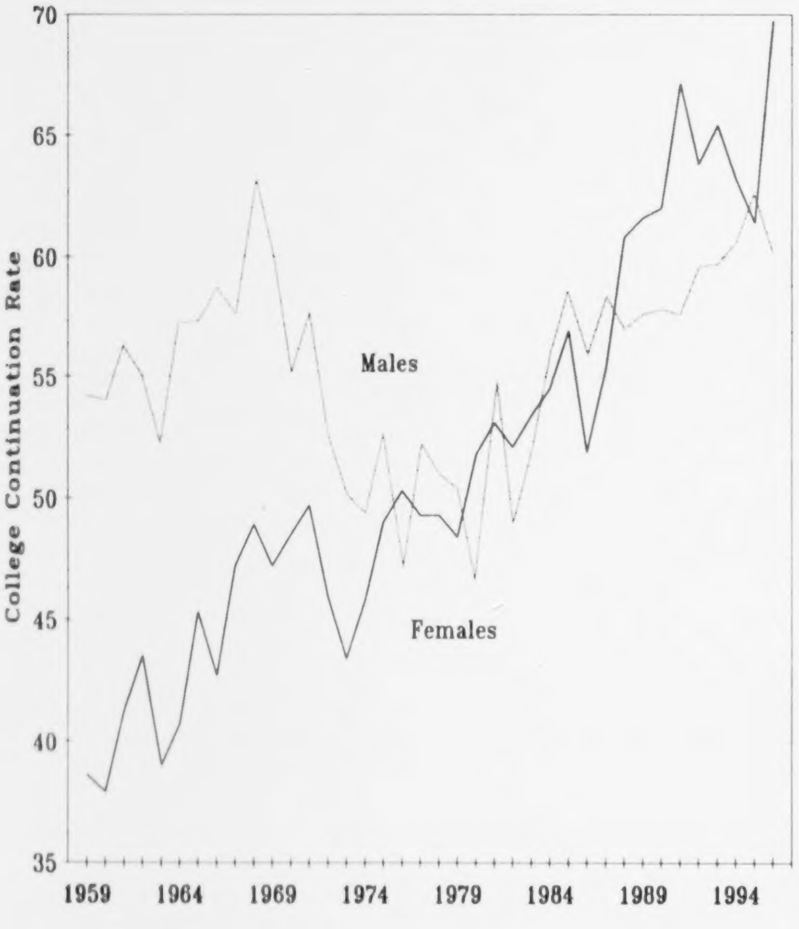
A sharply different picture for females is reflected in the chart on this page. Young women high school graduates have made almost steady annual gains in the rate at which they continue their studies in college. In nearly four decades their college continuation rate has nearly doubled. Within the parameters of statistical noise due to sampling, the progress appears to be nearly continuous over this period.

Here too we can convert the differences in growth rates between the genders to growth in college freshmen enrollments. Using 1959 college continuation rates and 1996 high school graduates as baselines, instead of 1,729,000 college freshmen as their were in 1996, there would have been only 1,216,000 freshmen at 1959 college continuation rates. The difference of 513,000 college freshmen reflects growth in college continuation rates between 1959 and 1996. Of this total, males contributed 76,000 to the growth in freshmen enrollments, and females contributed 424,000 to this growth.

Race/ethnicity. Important stories are told by the data on college continuation rates by race/ethnicity. The stories are told in charts that begin with the rate for whites as the reference.

The first chart on the following page

College Continuation Rates by Gender
for Recent High School Graduates
1959 to 1996



shows college continuation rates for whites and blacks for the years between 1960 and 1996. The data shown for blacks are for non-whites from 1960 through 1975. The rate data for blacks is also graphed as a moving three-year average to reduce statistical noise that results from sampling, and to emphasize the underlying trends present in the data.

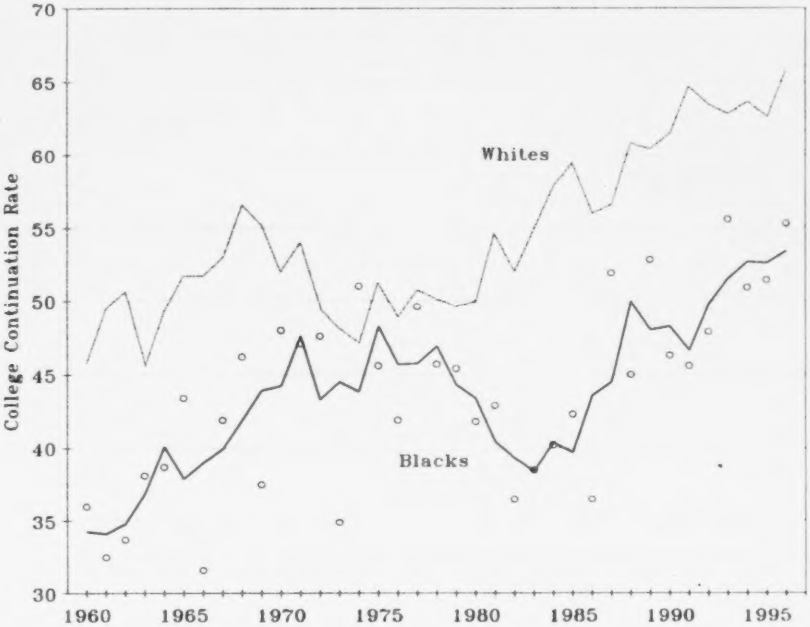
For both whites and blacks, college continuation rates have shown fluctuations, but overall increases. For both racial groups, college continuation rates were lowest around 1960 and highest in 1996.

In between the extremes, however, a quite striking story emerges. During the 1970s, when this country was briefly committed to equalizing educational opportunities across racial groups, the gap between the college continuation rates of whites and blacks briefly closed. Since the 1970s, the gap between blacks and whites in college continuation rates has widened to more than it had been in the 1960s.

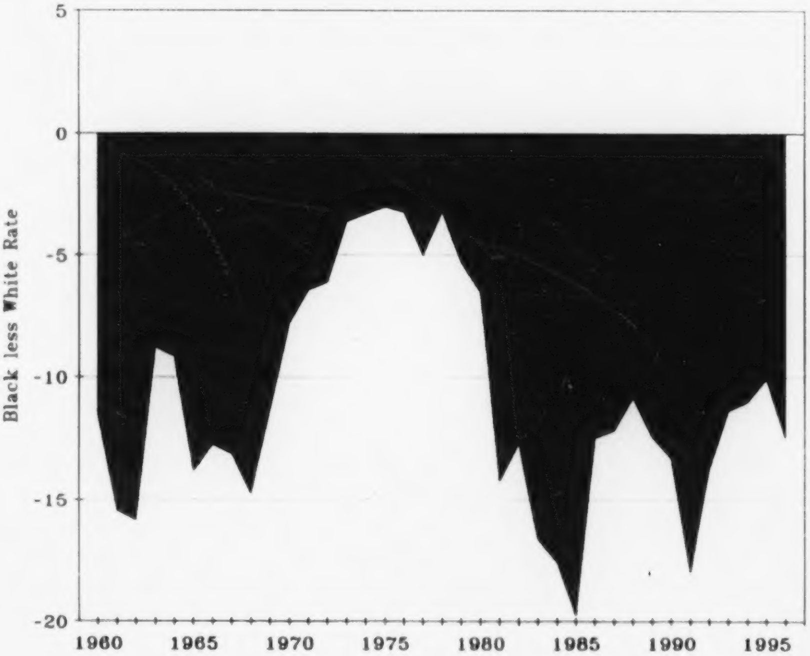
Another way to assign political responsibility for this issue is to calculate the average gap for the years when different presidents were in power and can be held accountable for their performance. Here we have calculated the average gap in college continuation rates between blacks and whites as of the October Current Population Survey date for each president since Eisenhower:

President	Years	Average Difference in Participation
Eisenhower	1960	-11.6%
Kennedy	1961-63	-13.3%
Johnson	1964-68	-9.9%
Nixon	1969-73	-7.0%
Ford	1974-76	-3.1%
Carter	1977-80	-5.0%
Reagan	1981-88	-14.5%
Bush	1989-92	-14.3%
Clinton	1993-96	-11.2%

College Continuation Rates
for White and Black Recent High School Graduates
1960 to 1996



Difference Between Black and White
College Continuation Rates, 1959 to 1996



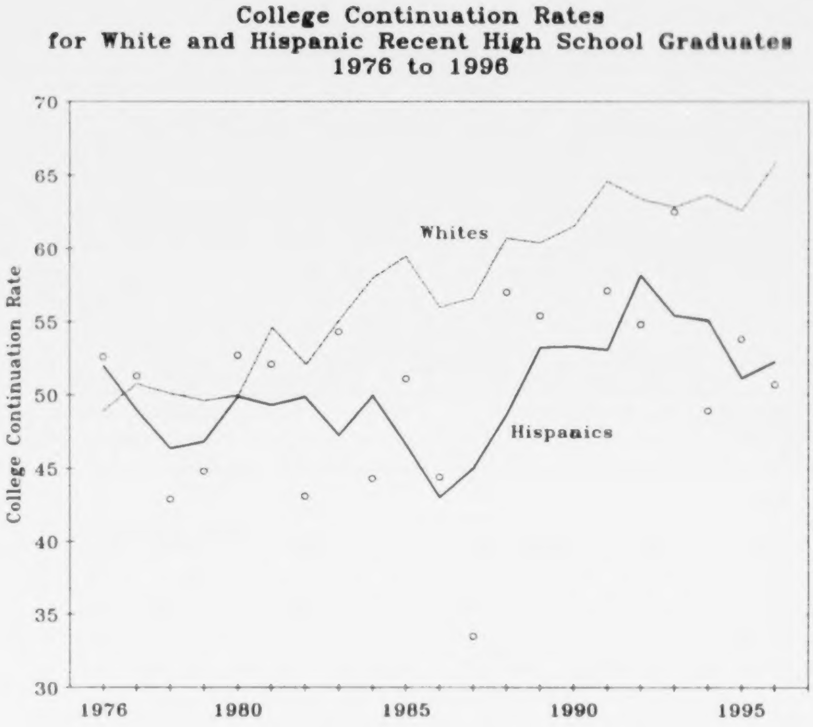
By this measure, the disparity between black and white college continuation rates was least under Presidents Ford, Carter and Nixon, and was greatest under Presidents Reagan, Bush and Kennedy. President Clinton ranks in the middle, along with Presidents Eisenhower and Johnson.

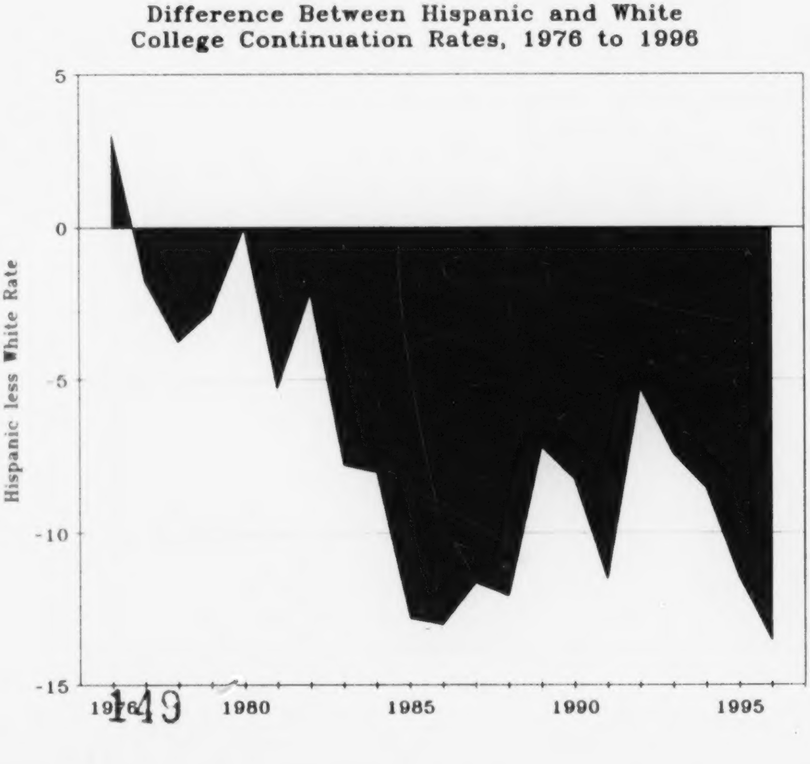
The available Census Bureau data on Hispanics begins about 1976, and thus only about two decades of history have been documented. These data are also characterized by large sampling variation due to small sample size, and thus we have calculated a moving three-year average to reduce statistical noise and emphasize the important underlying trends.

The picture for Hispanics compared to whites is shown in the charts on this page. It is not a pretty picture.

In 1976 the rate at which Hispanic high school graduates continued their educations after high school stood above the rate for whites--52 compared to 48.9 percent. Since then Hispanic high school graduates have fallen far behind whites in the rate at which they pursue college immediately after high school graduation. By 1996 the rate for Hispanics was about 52 percent, or where it was in 1976, while the rate for whites had risen to nearly 66 percent. In 1996 the disparity between the Hispanic and white college continuation rate was greater than it has been at any time in the last 21 years of available Census data--about 13.6 percent.

The relatively low college continuation rate for Hispanic high school graduates is greatly aggravated by the extraordinarily low rate at which Hispanic students graduate from high school. The October 1996 Current Population Survey reported 332,000 Hispanics had left high school during 1995-96, 227,000 as graduates and 105,000 as dropouts. This is a graduation rate of 68.4 percent,


College Continuation Rates
for White and Hispanic Recent High School Graduates
1976 to 1996


Difference Between Hispanic and White
College Continuation Rates, 1976 to 1996

compared to 78.9 percent for blacks and 85.1 percent for whites. While Hispanic college continuation rates are similar to those for blacks, because the Hispanic high school graduation rate is so far below that for blacks a 19 year old Hispanic is far less likely to reach college than is a black.

Finally, the published data permit the college continuation rate to be calculated for those of "other race." This group consists of Asians, American Indians, etc., and is mainly Asian. This group has certainly become more Asian and grown over time. Data are available for the years since 1977. The data are calculated by subtracting whites and blacks from the totals reported.

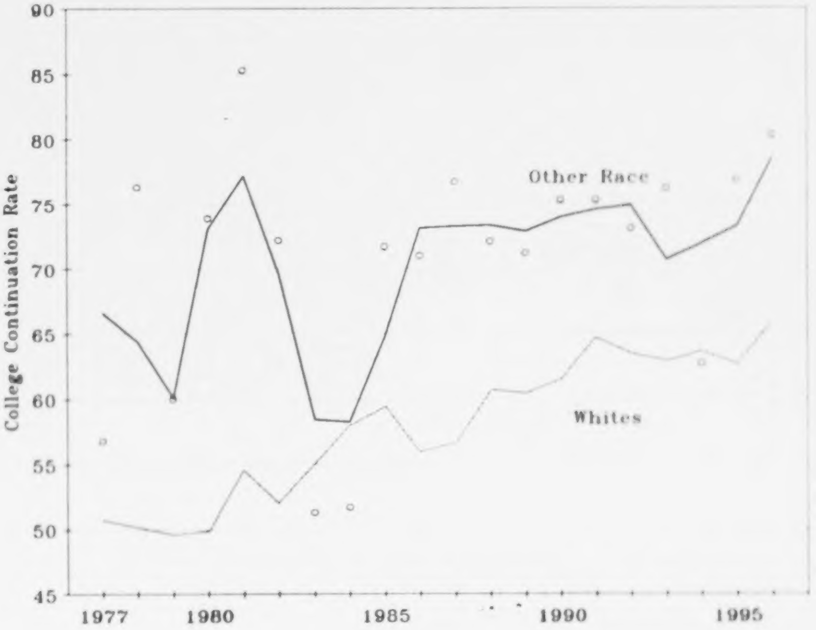
The college continuation rate for other race recent high school graduates are shown in the top chart on this page. Because of the small numbers, sampling produces large statistical noise. Thus, the moving three-year average for these data is plotted and compared to the rate for whites since 1977.

For most years the college continuation rate for the other race group has averaged 10 to 20 percent above the white rate. In 1996 it was about 13 percent above the white rate.

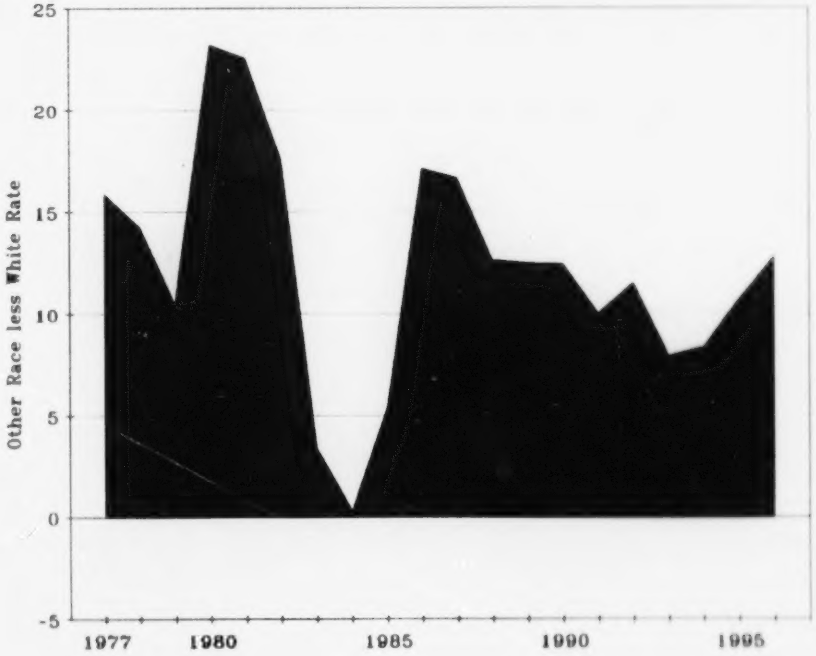
The effect of the high college continuation rate for the other race group is magnified by their high graduation rate from high school. Separating our populations into four mutually exclusive groupings, we can calculate chance for college by age 19 in October of 1996 as follows:

	HSG Rate	Coll Cont Rate	Chance for College
White/Non-H	87.7%	67.7%	59.4%
Black	78.9%	55.3%	43.6%
Hispanic	68.4%	50.7%	34.6%
Other race	88.4%	80.3%	70.9%
TOTAL	84.3%	65.0%	54.8%

College Continuation Rates for White and Other Race (mainly Asian) Recent High School Graduates 1977 to 1996



Difference Between Other Race (mainly Asian) and White College Continuation Rates, 1976 to 1996



Labor Force Participation

Nearly half of all college freshmen who were recent high school graduates are also in the labor force, most employed and some unemployed. In October of 1996, out of 1,729,000 recent high school graduates who were then enrolled in college, 676,000 were also employed and 126,000 were looking for work.

The chart on this page summarizes labor force participation data for recent high school graduates between 1959 and 1996. Among recent high school graduates who were enrolled in college, 46.3 percent were in the labor force and 39.1 percent were employed. The unemployment rate of those in the labor force 15.7 percent.

The employment rate varied widely across different classifications of the population of college freshmen. In the following table, the employment rate is the proportion of the population that is employed, while the unemployment rate is the proportion of those in the labor force who are unemployed and seeking employment.

	Employ Rate	Unemploy Rate
Part-time	81.2%	5.8%
Full-time	35.4%	17.5%
Two-year college	50.4%	18.3%
Four-year college	32.8%	13.4%
Men	36.7%	18.0%
Women	41.0%	14.0%
White	42.4%	14.1%
Black	32.0%	21.8%
Hispanic	47.3%	18.2%

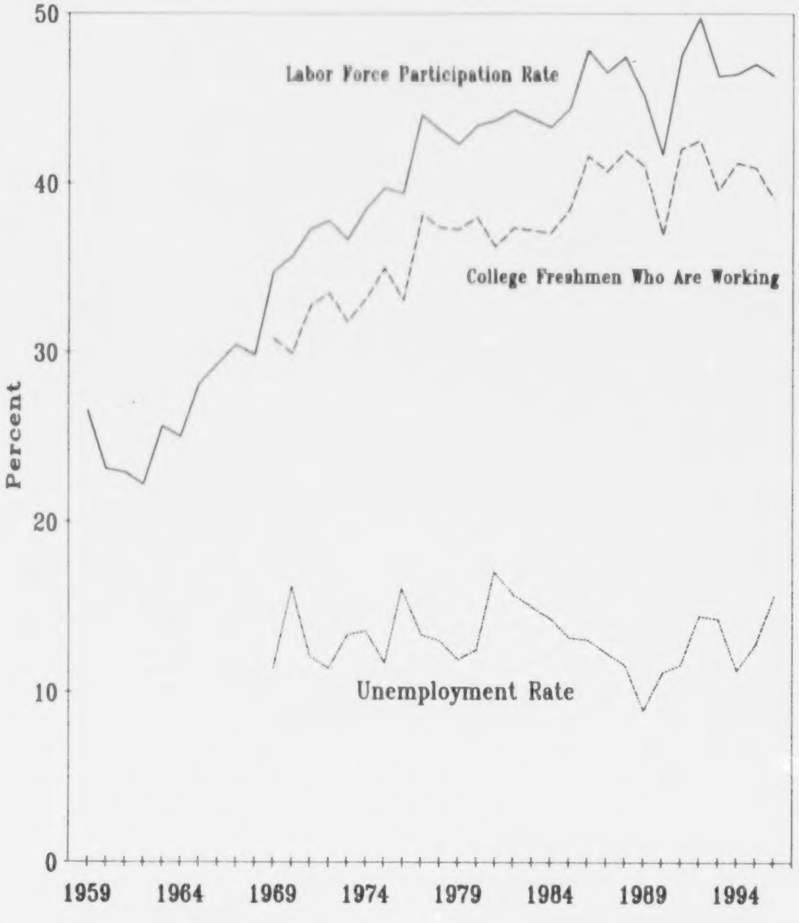
Clearly, many more college freshmen are working in 1996 than was the case 25 years ago, and the labor force participation rate has more than doubled since the early 1960s.

Summary and Conclusions

College enrollment immediately following high school graduation is now at record highs, the result of record high college continuation rates and increasing numbers of high school graduates since 1991. About 55 percent of all those leaving high school reach college by the fall following high school. These rates vary widely, however, across different groups of the population. At the extremes, the chance for reaching college ranged for about 71 percent for those of other race (mainly Asian) to about 35 percent among Hispanics.

These data must be considered in the context of growing educational attainment requirements of the economy generally and the labor market in particular. Those who pursue postsecondary education or training are likely to obtain the best paying jobs the labor force has to offer. Those who end their education at high school or less will get what is left over. Since the early 1970s, incomes have been redistributed according to educational attainment, with real increases in incomes (and living standards) for those with the most education and real decreases in incomes for those with the least formal education. These data indicate who is preparing for more prosperous futures and who is not.

Labor Force Participation of College Freshmen
Who Were Recent High School Graduates
1959 to 1996



Employment and Unemployment Rates by Educational Attainment
1970 to 1996

A person's ability to support one's self and family are dependent on gainful employment. Here we explore some unpublished data from the Bureau of Labor Statistics on employment and unemployment by educational attainment.

What these data show are many strong positive relationships between educational attainment and employment:

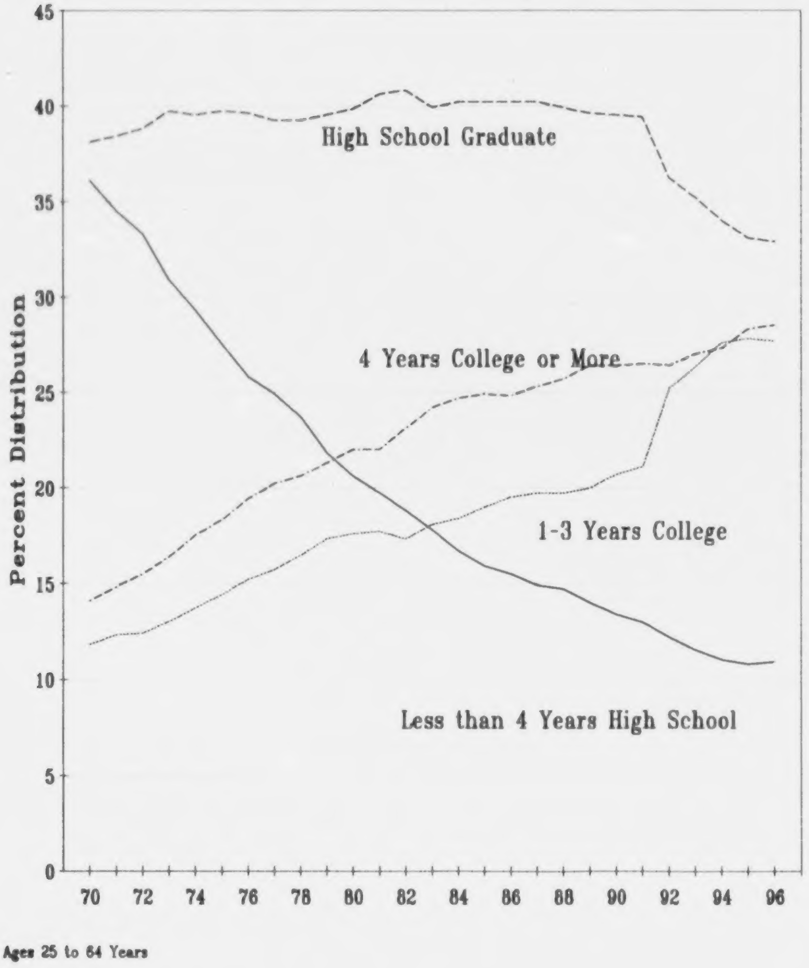
- For both genders and all racial/ethnic groups, labor force participation increase sharply with educational attainment.
- For both genders and all racial/ethnic groups, employment/population rates increase sharply with educational attainment.
- For both genders and all racial/ethnic groups, unemployment rates decrease sharply with educational attainment.

One's ability to find and hold employment is clearly, strongly related to one's educational attainment. This means, among other things, that a person's ability to support one's self and family is related to educational attainment. Moreover, this relationship appears to imply that the labor market is oversupplied with workers inadequately educated to find and hold gainful employment.

In this analysis we explore a very few of the many relationships between educational attainment and labor force participation, employment and unemployment. The findings indicate not only the obvious that those with more education are more likely to find and hold jobs than are those with less formal education. But when analyzed over time, the importance of postsecondary education to employment is strengthening: unemployment rates have risen far more for the less well educated than they have for those with substantial amounts of postsecondary education.

And despite the often-reported difficulties recent college graduates have in getting started in the labor market, they are far more likely to find and hold employment than are their age-peers with less formal education and training.

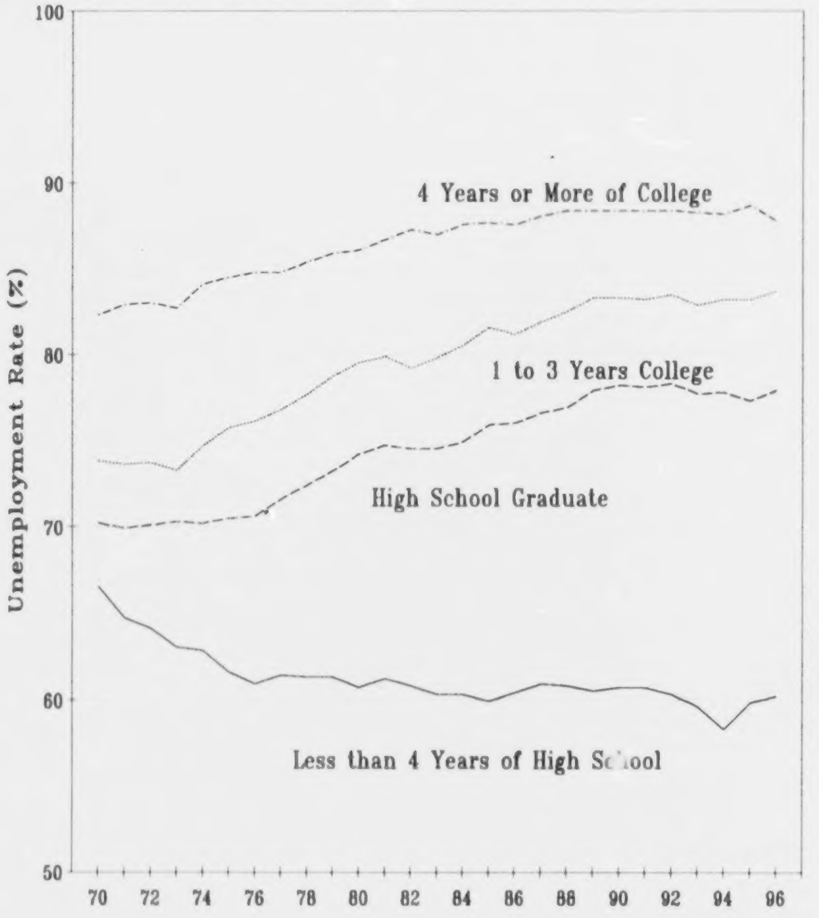
Civilian Labor Force by Educational Attainment
1970 to 1996



Ages 25 to 64 Years

The Data

The data used in this analysis were obtained by the Bureau of Labor through the Current Population Survey. The time-series data reported



Labor Force Participation Rates by Educational Attainment 1970 to 1996

Ages 25 to 64 Years

here were compiled by Sharon Cohany and fellow BLS statisticians from Bureau of Labor Statistics data archives.

The framework of these data is important to understand because this report will follow the BLS structure and definitions closely. The BLS begins with the Current Population Survey definition of the civilian, noninstitutional population. This population is first divided into those in the labor force, and those who are not. Those who are in the labor force may be either employed or unemployed and seeking employment.

From these classifications of the population several key rates are calculated:

- The *labor force participation rate*, which is calculated by dividing those who are in the labor force (employed or unemployed) by the civilian noninstitutional population.
- The *employment-population ratio* which is the number of people employed by the civilian noninstitutional population.
- The *unemployment rate* is the number of those who are unemployed and seeking employment, divided by the number in the labor force.

These data are available in great detail for 1996, and in more summarized form for each year between 1970 and 1996. The detail disaggregates the data by gender, race/ethnicity and age. The data presented here is limited to those between the ages of 25 and 64 years.

Labor Force Composition

In 1996 the civilian labor force age 25 to 64 years totaled 108,0376,000. This has grown steadily from 62 million in 1970, 78 million in 1980, and 99 million in 1990. During this period of growth, the male labor force of this age range increased by 48 percent, while the female labor force increased by 122 percent.

More important to our analysis here than growth is the great change in the educational attainment of those in this labor force as shown in the chart on the previous page. The labor force has become better educated, year after year, between 1970 and 1996.

- In 1970 36.1 percent of the labor force had less than 4 years of high school education. By 1996 this had shrunk to 10.9 percent of the total.
- In 1970 25.9 percent of this labor force had any college at all. By 1996 this had increased to 56.2 percent.

These changes are even more dramatic for females than they are for males.

Labor Force Participation

The rates at which the civilian, noninstitutional population participate in the labor force have generally grown between 1970 and 1996. But the variations across levels of educational attainment are important.

For those who were not high school graduates, labor force participation

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rates declined, particularly between 1970 and about 1985. For all other levels of educational attainment, labor force participation rates have increased:

- Among high school graduates, the participation rate increased by 7.7 percent, from 70.2 to 77.9 percent.
- Among those with 1 to 3 years of college, the rate increased by 9.9 percent, from 73.8 to 83.7 percent.
- Among those with 4 years of college or more, the labor force participation rate increased by 5.5 percent, from 82.3 to 87.8 percent.

Employment-Population Ratio

In 1996 there were 136,496,000 Americans between the ages of 25 and 64 years in the civilian, noninstitutional population. Of this total, 104,380,000 were employed, for an employment-population ratio of 76.5 percent.

The employment-population ratio varies by gender and race/ethnicity. Among 25 to 64 year old males in 1996 the ratio was 84.4 percent, compared to 68.9 percent for females. The gender difference was greatest among Hispanics, and least among blacks.

As shown in the chart on this page, this ratio varied widely across levels of educational attainment, from about 50 percent of those with less than 1 year of high school, to more than 91 percent among those with doctoral and professional degrees. Between the extremes the largest gains are across levels of secondary education. For those who have at least some college education, gains in the ratio are smaller, undoubtedly because they are approaching 100 percent.

Unemployment Rates

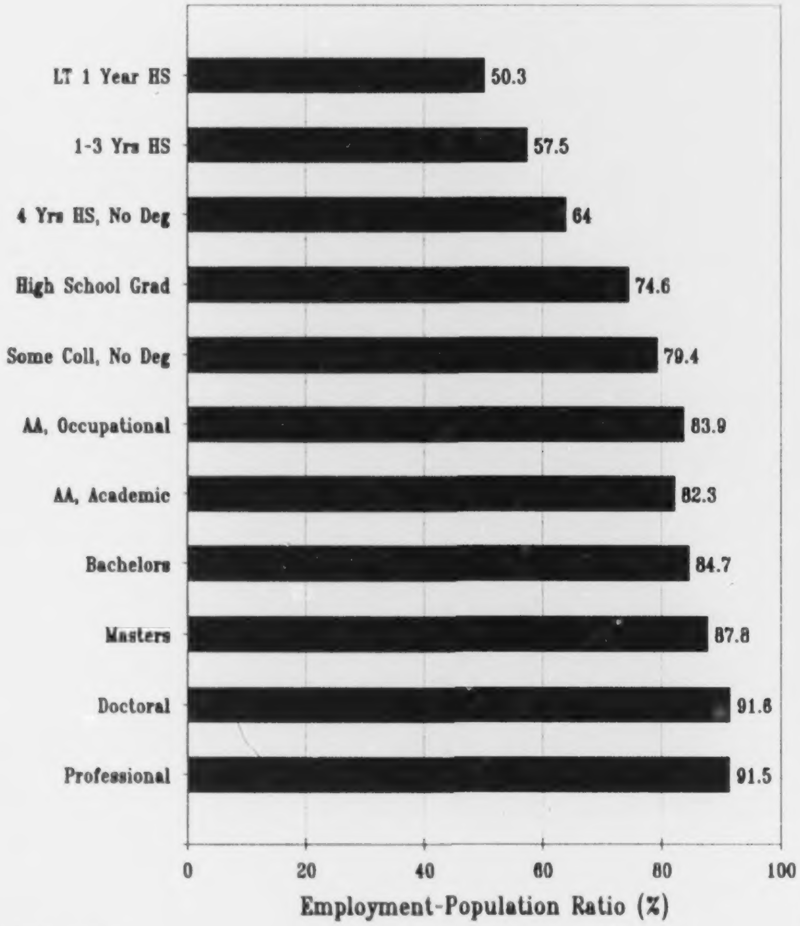
The overall unemployment rate for 25 to 64 year olds in 1996 was 4.2 percent. It was 4.1 percent for males, and 4.3 percent for males. By racial/ethnic categories, the unemployment rate was 3.7 percent for whites, 7.7 percent for blacks and 7.1 percent for Hispanics.

While employment rates for the population increase with educational attainment, the reverse is true for unemployment rates. These data are for 1996, a year of strong economic activity nationally and, by historical standards, very low unemployment.

Among those in the labor force, unemployment rates ranged from about 9 percent for those with least formal education, to less than 2 percent for those with the most formal education. These data are shown in the chart on the following page, and on the poster accompanying this issue of OPPORTUNITY.

When a control for age is introduced into the analysis, a perennial issue affecting recent college graduates comes into clearer focus. For decades newspapers have reported on the difficulties experienced by recent college graduates in finding jobs.

Employment-Population Ratio by Educational Attainment
1996



Ages 25 to 64 Years

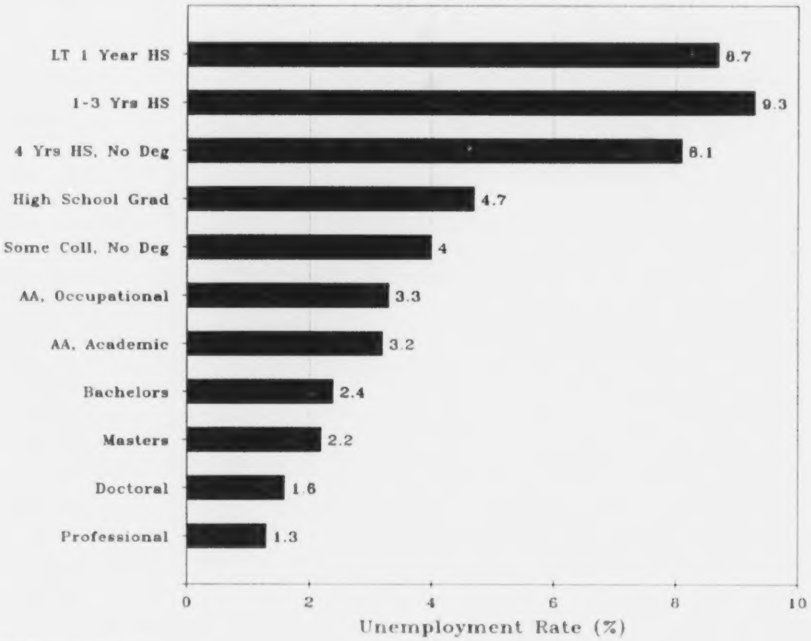
The first job out of college seems to be particularly difficult for some recent graduates to find. While the current strong economy has diminished this issue this year, the story seems to be a perennial favorite with the newspapers. The second chart on this page helps put this issue into perspective.

Unemployment rates are strongly related to age--they are far higher among younger workers than they are among older workers at any level of educational attainment. However, at almost any age through about 55 years, unemployment rates are lower at higher levels of educational attainment than they are at lower levels of education. For example, at age 22 to 24 years, when baccalaureate degree recipients begin to enter the labor market, the unemployment rate for bachelor degree holders was 5.2 percent in 1996, compared to 4.5 percent for associate degree holders, 10.8 percent for high school graduates and 21.9 percent for those with 1 to 3 years of high school. Between the ages of 25 to 34 years, the unemployment rate for bachelor's degree holders was 2.4 percent, compared to 3.3 percent for associate degree holders, 6.3 percent for high school graduates and 13.2 percent for those with 1 to 3 years of high school.

The public accounts of difficulty recent college graduates have in finding their first job appear to greatly exaggerate the problem of unemployment. Controlling for age, those with college degrees are far more likely to be employed than are those with high school educations or less.

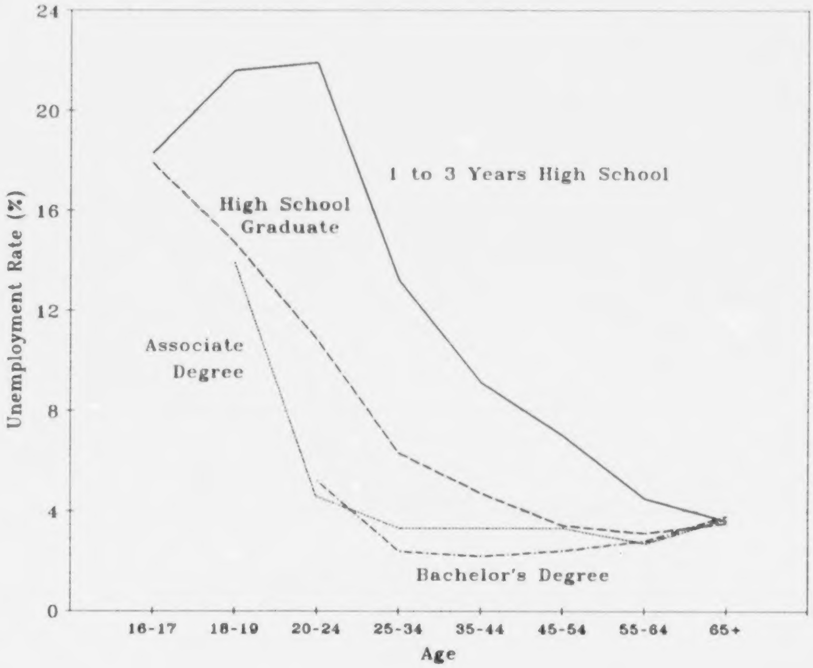
Unemployment rates have changed over time. They fluctuate with the business cycle, and indeed unemployment rates are an important (if lagging) measure of cyclical economic activity in the United States.

Unemployment Rates by Educational Attainment
1996



Ages 25 to 64 Years

Unemployment Rates by Educational Attainment
and Age, 1996



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The chart on this page clearly shows these fluctuations in unemployment rates over the years between 1970 and 1996. Unemployment rates increased sharply in 1975, again in the early 1980s and again in the early 1990s when the economy contracted. Employers laid-off workers who found it difficult to regain employment, at least until the economy began to expand again and employers added workers to their payrolls.

Here we are mainly interested in unemployment rates by educational attainment. The adjacent chart shows that unemployment rates have consistently been greatest for those with least formal education, and lowest for those with the most formal education.

But this chart makes two other important points. First, when the economy enters its recessionary phase, unemployment rates increase the most for those with least education, and increase the least for those with the most formal education. That is, cyclical economic activity has far greater impact on those with the least education and affects those with college educations only very slightly. Lives are least disrupted by the business cycle for those who are relatively insulated from it by their higher educations.

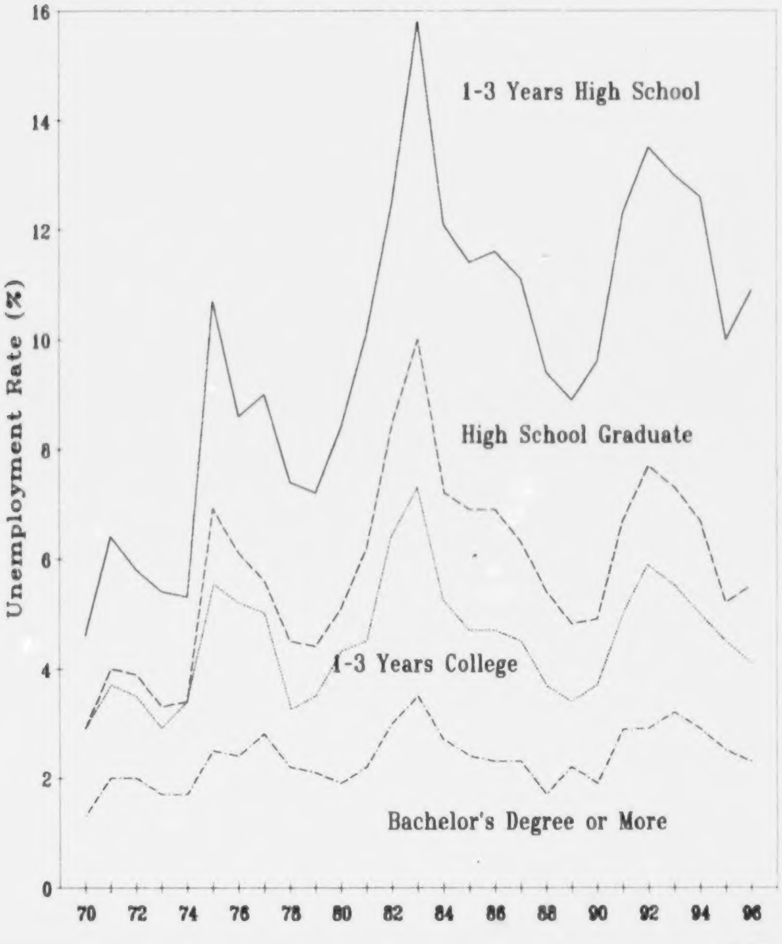
The second point made by this chart, and emphasized in the chart on the following page, is that unemployment rates are higher in 1996 than they were in 1970. However, they have increased the most among those with least formal education, and least among those with the most formal education.

Our interpretation of this follows directly from the demand-supply theory of economics. That is, the labor market appears to be most oversupplied with workers with least formal education, and least oversupplied with workers with the most formal education. Changes in the market value of labor at different levels of educational attainment are consistent with this interpretation.

As the chart on page 10 makes clear, the educational attainment levels of the civilian labor force have greatly improved between 1970 and 1996. Undoubtedly these changes have been driven by the unequivocal signals from the labor market that more education leads to better jobs. Therefore, those who wish to either improve their present living standard (as in the case of employed adults) or to live their future lives at high standards (such as younger students in secondary and postsecondary education) must gain the education that will provide access to the best paying jobs this labor market has to offer.

Despite this large gain in educational attainment, however, it has not been enough. Changes in unemployment rates indicate that the labor market is greatly oversupplied with relatively uneducated workers. All of the efforts by individuals and public policy to improve the educational preparation of workers have fallen short of the growing needs of the labor market for

Unemployment Rates by Educational Attainment
1970 to 1996



workers with postsecondary education and training.

Summary and Conclusions

When fall 1996 college freshmen were asked what were very important reasons motivating them to continue their educations after high school, the top reasons were:

	Citing Very Important
Get a better job	76.7%
Learn more about things	74.3%
Make more money	72.4%
Gain general education	62.1%
Improve reading/study skills	42.8%
Prove I could succeed	39.5%
Become a more cultured person	38.0%

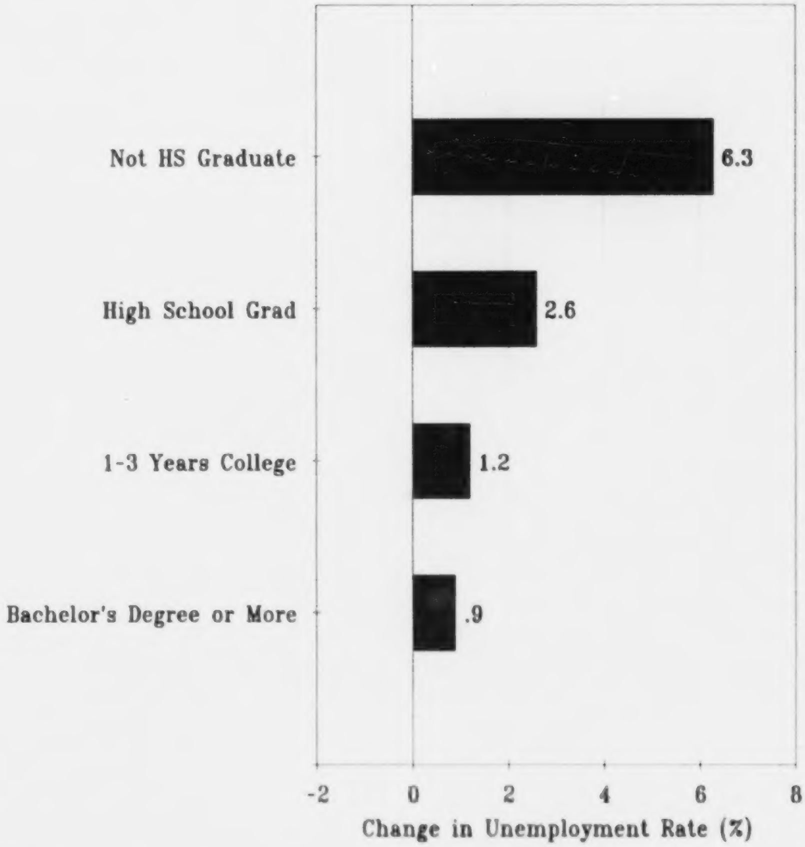
Clearly, the employment value of a college education is appreciated by those who reach college.

The data summarized here help make the same point. In response to growing educational requirements of the labor force, a growing share of workers have made the voluntary and expensive decision to pursue postsecondary education. In 1970 25.9 percent of the labor force between the ages of 25 and 64 years had at least some college education. By 1996 the proportion had more than doubled, to 56.2 percent.

The economic reasons why individuals pursue education are described repeatedly and in many ways in the pages of OPPORTUNITY. This analysis examines another aspect: employment and unemployment. The results of this analysis are:

- The employment-population ratios increase with educational attainment.
- Labor force participation rates increase with educational attainment.
- Unemployment rates decrease with educational attainment.

Change in Unemployment Rates
by Educational Attainment
1970 to 1996



These findings apply to males and females, to whites, blacks and Hispanics, and to those at any age. The labor market holds everyone--individuals, families, communities, states and the country--to the same high standards: there are good jobs for those with the most formal educations. Those without postsecondary education and/or training will get what is left. And, judging by the high and rising unemployment rates among the least well educated workers in the labor force, there are not enough low-skilled jobs left over for those who lack the postsecondary education to take them out of the hopeless futures they otherwise face. The supply of low skilled labor exceeds the labor market demand for it.

The requirements for a decent living standard used to be just honesty and hard work. Later these requirements were embellished by minimum wage and other labor legislation, labor unions, and when all else failed we offered a social safety net for those who could still not make it.

Those embellishments have been largely replaced by postsecondary educational attainment requirements. Now, to be successful, a person needs to be honest, hard-working and have postsecondary education and/or training that make a productive and valuable worker. We have made great, but insufficient progress, toward this end and the target is still moving.

Changes at OPPORTUNITY

Two changes at OPPORTUNITY are happening with this issue: we have moved, and the price rate is going up.

The Move

OPPORTUNITY has moved from Iowa City to Oskaloosa, Iowa. The difference is about 80 miles. Our snail-address and phone numbers have changed, but our e-mail address will remain unchanged

When OPPORTUNITY was started in 1992, we saw a wide gap between public policy making and information on which public policy should be based. Public policy was being made (and continues to be) as if oblivious to the social, economic and demographic conditions under which education operates and must address student and social needs. OPPORTUNITY was created to try to bridge that gap. We continue to believe that sound public policy must be based in reality, and we decided to try to bridge the information gap.

But starting OPPORTUNITY was a gamble, and would take time. The family supported the start-up of OPPORTUNITY in 1992. Now we owe support to our family.

The Rate Increase

OPPORTUNITY started out as an 8 page newsletter, then went to 12 pages, then 16. Several recent issues have been 20 to 24 pages in length. We have expanded to more fully and fairly address the policy issues we try to cover in OPPORTUNITY each month. Along the way we have increased our price to cover part of the increased costs of printing and mailing each issue. But the price increases have been less than the cost increases. Until now we have tried to cover these increased publication costs with increased subscriptions rather than increased prices to subscribers, and we will continue to try to do so.

Recently we have added posters to our mailings and found a wonderful response from our subscribers. Many subscribers place orders for posters in volume to distribute within their institutions, to high schools in their regions, and even to state legislators in several states. These add to the printing and postage costs of each month's mailing. We cannot absorb such costs with increased subscription revenue, so we are increasing our subscription rate. You will receive about 10 posters per year along with your copies of OPPORTUNITY.

You can, of course, order additional posters in quantity and we hope many will do so to alert students to the enormous benefits of postsecondary education and training. The posters have become an important part of OPPORTUNITY's mission to educate those who make education policy and administer institutions and programs through which educational opportunity is delivered. But mainly we want to reach students: education is vital to their lives and is worth every penny students pay for it. These posters help them understand why.

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Postsecondary Education
OPPORTUNITY

The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 63 **Oskaloosa, Iowa** **September 1997**

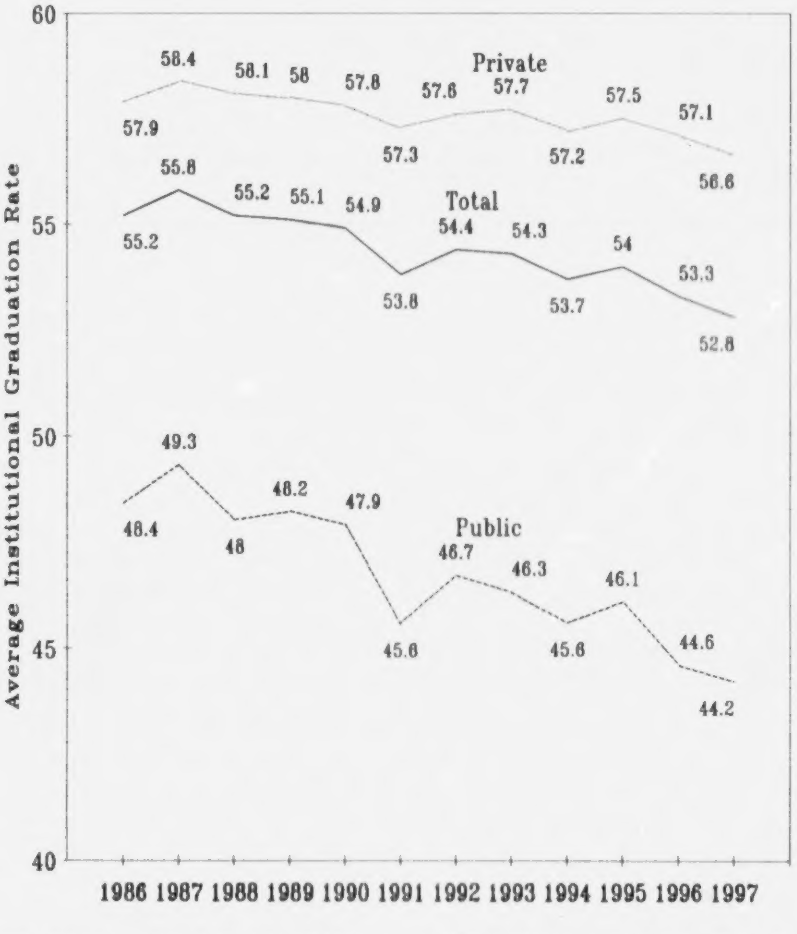
5-Year Institutional Graduation Rates by Degree Level, Control and Academic Selectivity 1983 to 1997

College freshmen enroll in college mainly for economic and general educational motives. Freshmen recognize that a college degree is essential to career development and material reward from their labors. They also appreciate the liberalizing influence of college educations on their understanding of the world in which they live.

Nearly all college freshmen report that they have entered college to earn at least a baccalaureate degree. The 1996 survey of American college freshmen found that 94.7 percent of all first-time, full-time college freshmen planned to earn at least a bachelor's degree from college. The proportions ranged from 99.4 percent of the freshmen entering private universities, to 85.1 percent of those entering public 2-year colleges.

Moreover, nearly all freshmen entering 4-year colleges expect to earn their bachelor's degree at the institution where they initially enter the high education system. Among freshman entering four-year colleges, 95.8 percent expected to graduate from the college where they initiated their studies. Among freshmen entering universities, 97.6 percent expected to earn their bachelor's degree from their initial university. Even among freshmen at two-year colleges, 21.0 percent reported that they expected to receive their bachelor's degree from the two-year college where they first enrolled!

5-Year Institutional Graduation Rates for Public and Private Institutions 1986 to 1997



Here we examine data describing trends and patterns in 5-year institutional graduation rates (IGR) at 1456 colleges and universities that award at least the bachelor's degree. We analyze these data by institutional

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control, degree level and academic selectivity. We examine these data for the years between 1983 and 1997.

The results of these analyses lead directly to important findings:

- Institutional graduation rates are driven largely by academic selectivity measures. Five-year IGRs are highest at the most selective institutions, and lowest at the least selective institutions.
- At any level of academic selectivity, average IGRs are greater in private institutions than they are in public institutions.
- Over the last decade, graduation rates have increased only at the most academically selective institutions. They have declined for all others, and especially at the least selective institutions.
- At the most selective institutions, IGRs have increased more at public institutions than they have at private ones.

The Data

Since in 1983 ACT has reported data on drop-outs between the freshman and sophomore years of college, and 5-year institutional graduation rates for 4-year colleges and 3-year institutional graduation rates for 2-year colleges. Copies of the annual basic report are available from Dr. Wes Habley at ACT in Iowa City, Iowa, at (319) 337-1483. Dr. Habley has recently become Director of the ACT Center for the Enhancement of Educational Practices.

These data are collected in ACT's annual Institutional Data Questionnaire survey. The results of this survey are used by ACT in a variety of ways, including reporting results of the ACT Assessment to students and in its publications.

College Planning/Search Book, 199X-9X Edition. (Annual) The American College Testing Program, Iowa City, Iowa.

In these ACT data, several definitions are somewhat unique and especially important in the analyses that follow.

First, ACT began reporting institutional graduation rates at five years in 1983 and has not changed the definition since then. Everyone else is now using six-year institutional graduation rate reporting in recognition of the lengthening time-to-degree of many undergraduate students. Thus, ACT's persistence in collecting and reporting 5-year IGRs is both positive in that it continues to report the same data year after year, and negative in that it fails to capture the lengthening time-to-degree behaviors. This point will be addressed again in the concluding section of this analysis.

Second, the term "academic selectivity" has specific and important meaning as used by ACT. When institutions complete ACT's Institutional Data Questionnaire, they self-report the high school class ranks of their freshman cohorts in response to the following question:

15. Check the category which best describes to prospective students your freshman admissions policy (as applied to in-state or in-supporting-area students).

1. ***Highly selective*** *(majority of accepted freshmen in top 10% of high school graduating class).*
2. ***Selective*** *(majority of accepted freshmen in top 25% of high school graduating class).*
3. ***Traditional*** *(majority of accepted freshmen in top 50% of high school graduating class).*
4. ***Liberal*** *(some freshmen from lower half of high school graduating class).*
5. ***Open*** *(all high school graduates accepted, to limit of capacity).*

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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ACT has converted these academic selectivity ranges to typical test scores for the ACT and SAT as follows:

	ACT	SAT
Highly selective	27-31	1220-1380
Selective	22-27	1030-1220
Traditional	20-23	950-1070
Liberal	18-21	870-990
Open	17-20	830-950

The terms "control" and "degree level" are assumed to be self-explanatory.

IGR Trends

In 1997, the average 5-year institutional graduation rate across 1456 bachelor degree granting institutions was 52.8 percent. In 450 public institutions the average IGR was 44.2 percent, and in 1006 private institutions the average IGR was 56.6 percent. Over all institutions, the difference between the IGRs for public and private institutions was 12.4 percent in 1997.

As shown in the chart on page 1, 5-year institutional graduation rates have been declining quite steadily over the last decade. Between 1987 and 1997, the average IGR for all institutions declined by 3.0 percent. In public institutions, the decline was 5.1 percent, and in private institutions the decline was 1.8 percent.

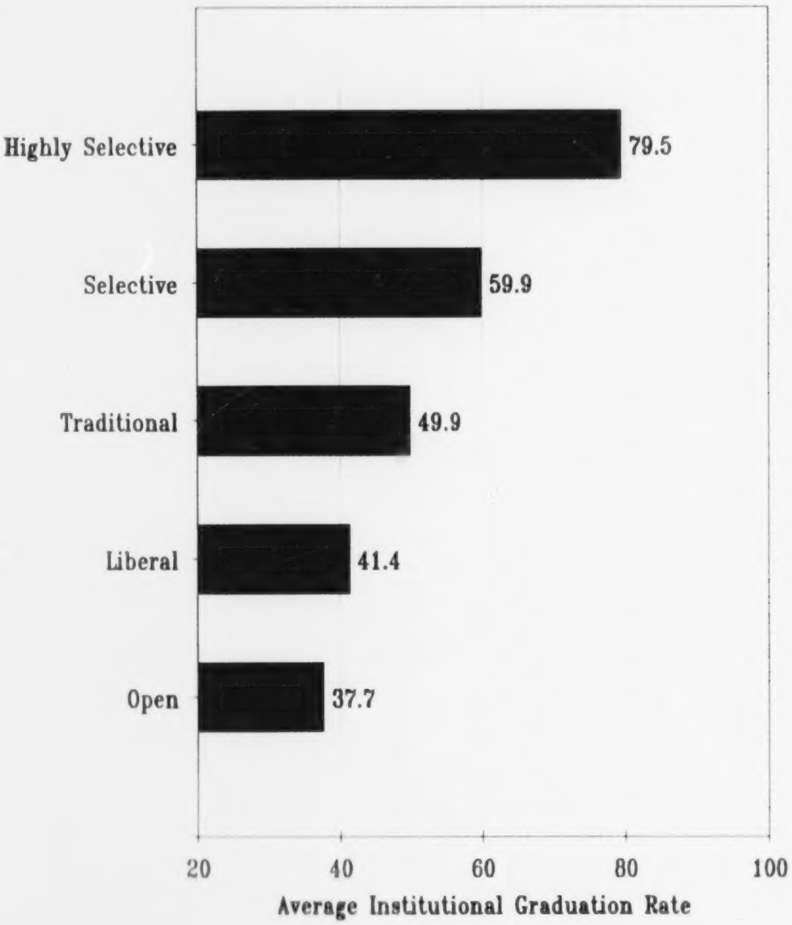
IGR by Academic Selectivity

The main focus of our interest here is to examine institutional graduation rates controlling for the differing academic backgrounds of students each institution serves. We have long been critical of the reporting of raw data on institution graduation rates, such as that done by the NCAA and others. Raw IGR data--uncontrolled for the academic profiles of the admitted freshman cohorts at each institution--overwhelmingly describes the academic backgrounds of the admitted freshmen and not what happens to students once they enroll and pursue their degree ambitions.

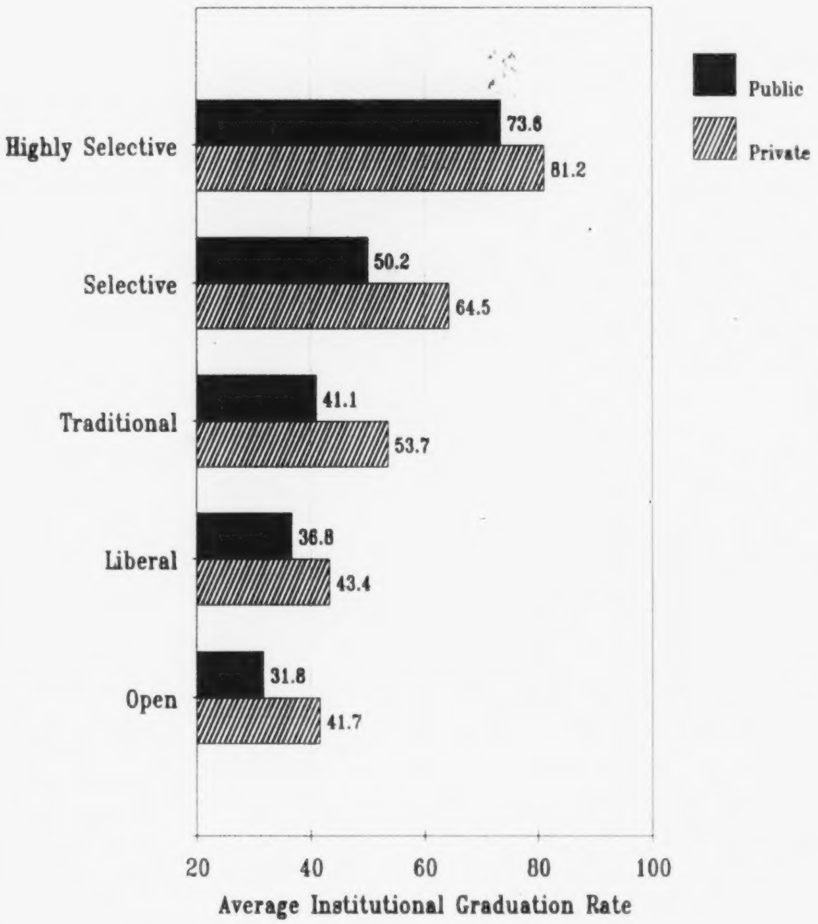
We are not the first to recognize this misuse of raw IGR data. Prof. Alexander Astin of UCLA has for many years articulated his concerns that raw IGRs tell one little or nothing about what happens to students once they enroll in particular institutions. Moreover, his research reflects his position that these data largely describe the academic backgrounds of admitted freshmen at each institution. ACTs initial reporting of these data in 1983 reflects their early concern for reporting IGR data controlling for academic backgrounds of admitted freshmen.

Nevertheless, the NCAA has been reporting raw IGR data that invites comparisons of the graduation rates of athletes with other students without regard to academic backgrounds. And until two years ago when they took us up on our suggestion to revise their ranking scheme, *U.S. News and World Report* used raw IGR data in its rankings of "America's Best Colleges." For the last two years, *U.S. News* has used an academically-

5-Year Institutional Graduation Rates by Academic Selectivity for Institutions Awarding Bachelor's Degrees
1997



Institutional Graduation Rates by Academic Selectivity and Control for Institutions that Award Bachelor's Degrees
1997



controlled IGR in its ranking schemes. We believe this is the only responsible way to use IGR data for any comparative, descriptive or judgmental reasons.

The chart on page 3 illustrates how important academic controlled IGR reporting is. The range in average IGRs is from about 38 percent among open admission colleges, to nearly 80 percent among highly selective colleges. With each step increase in academic selectivity from the least to the most selective, institutional graduation rates increase by ever greater amounts. Between selective and highly selective admissions colleges, the increase in average IGRs is nearly 20 percent.

The chart on this page shows institutional graduation rates for public and private institutions controlling for academic selectivity in admissions. The previous pattern holds: for both public and private colleges, graduation rates increase with academic selectivity.

But this chart highlights another important finding in the ACT survey data. At each level of academic selectivity, private colleges report higher graduation rates than do public colleges. The private college advantage is greatest among selective admissions institutions, a difference of 14.3 percent. That is to say, a freshmen admitted from the top 25 percent of his or her high school class would have a 14 percent greater chance of graduating from their initial college in five years at a private college than if they had entered a public college.

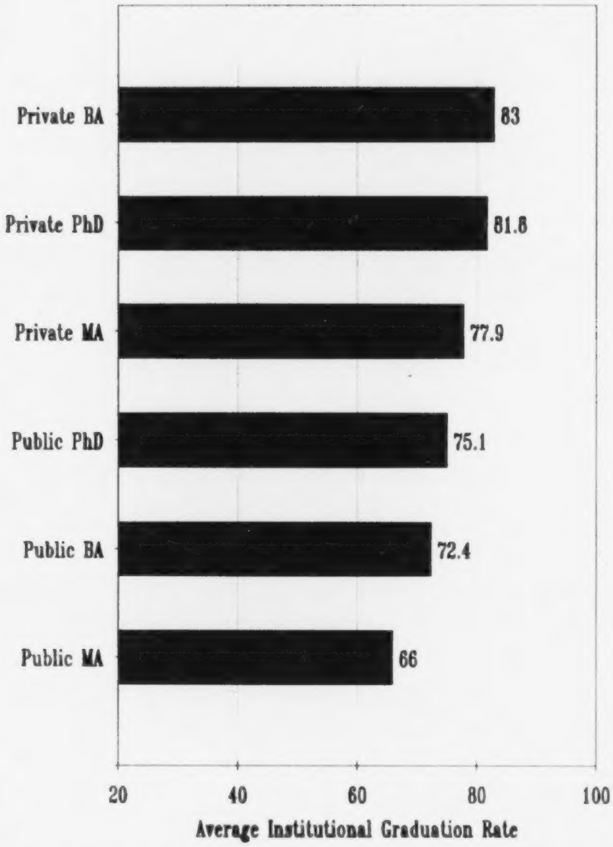
This difference is least, at 6.6 percent among liberal admissions colleges. But here too private colleges still graduate their admitted freshmen at greater rates than do public colleges. (This point will be discussed further in the concluding section of this analysis.)

IGRs by Selectivity, Degree Level and Control

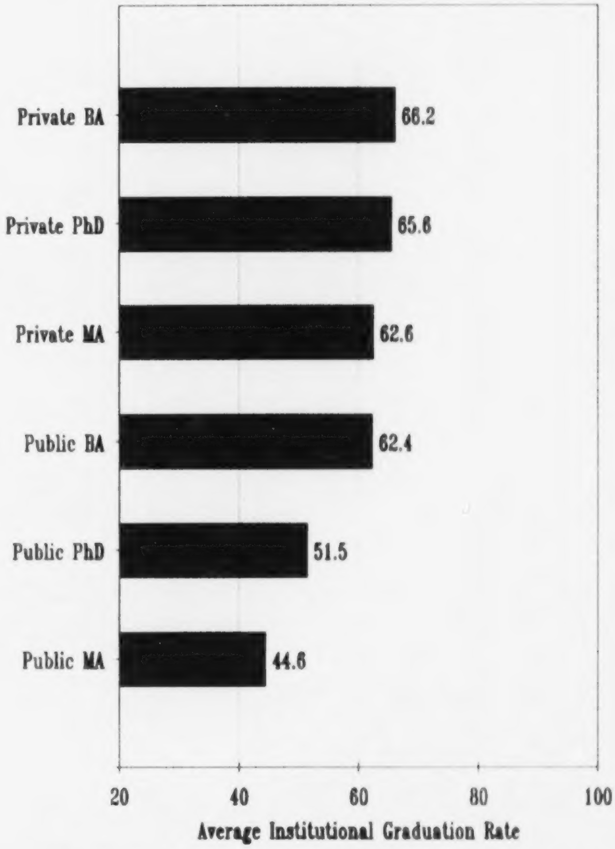
Within academic selectivity ranges, we report average 5-year institutional graduation rates by degree level and control beginning on the following page. The academic selectivity ranges shown are highly selective, selective, traditional and liberal. Here, private colleges and universities consistently report higher average IGRs than do public institutions serving students with roughly similar high school academic backgrounds. Moreover, since each chart plots data on the same scale, comparing the four charts highlights the strong correlations between academic selectivity and IGRS across institutions classified by control and degree level.

Highly selective. There are 119 institutions that identify themselves as highly selective on ACT's IDQ survey--28 are public and 91 and private. Most of the freshmen they admit come from the top 10 percent of

Institutional Graduation Rates for Highly Selective Institutions by Level and Control
1997



Institutional Graduation Rates for Selective Institutions by Level and Control
1997



their high school classes. The average 5-year institutional graduation rate for this group is 79.5 percent, with a range from 66.0 percent for public institutions that award up to the MA degree (3 institutions), to 83 percent among private colleges that award the bachelor's degree (29 institutions).

The standard deviations of the mean IGRs for each group of institutions by control and degree level range between 8 and 15 percent. Thus, there is variance in IGRs among the institutions in each group. This also means that there is overlap between groups in individual institutions' IGRs. Some public institutions will have higher IGRs than some private institutions enrolling freshmen from similar academic backgrounds, in this case largely the top 10 percent of the high school class. Thus, it is fair to note that not all private colleges have higher IGRs than all public colleges within the same academic selectivity range.

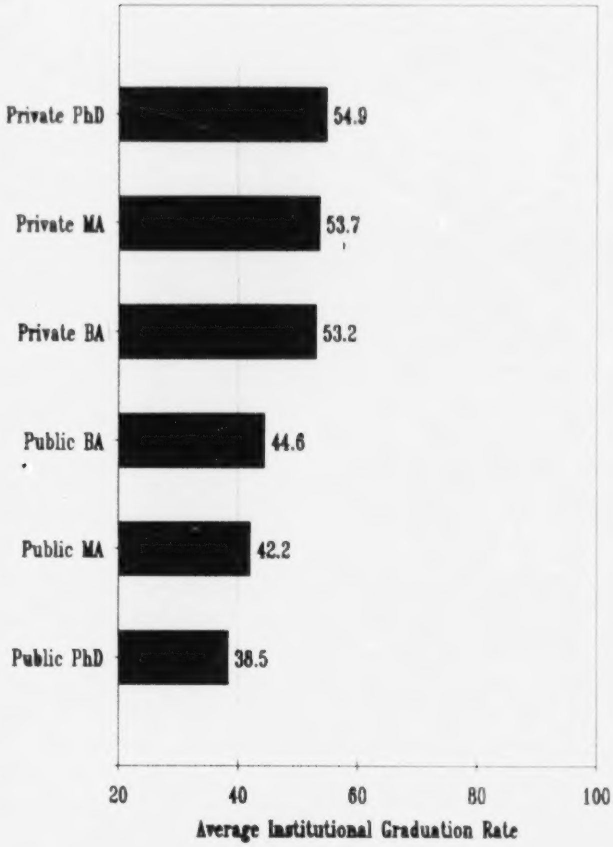
Selective. There are 401 colleges and universities that report selective admissions policies--130 public and 271 private. They enroll most of their freshmen from the top 25 percent of their high school class.

The average institutional graduation rate for this group was 59.9 percent, and ranged from 44.6 percent at public institutions whose highest degree is the master's degree, to 66.2 percent at private colleges where the highest degree awarded is the bachelor's degree.

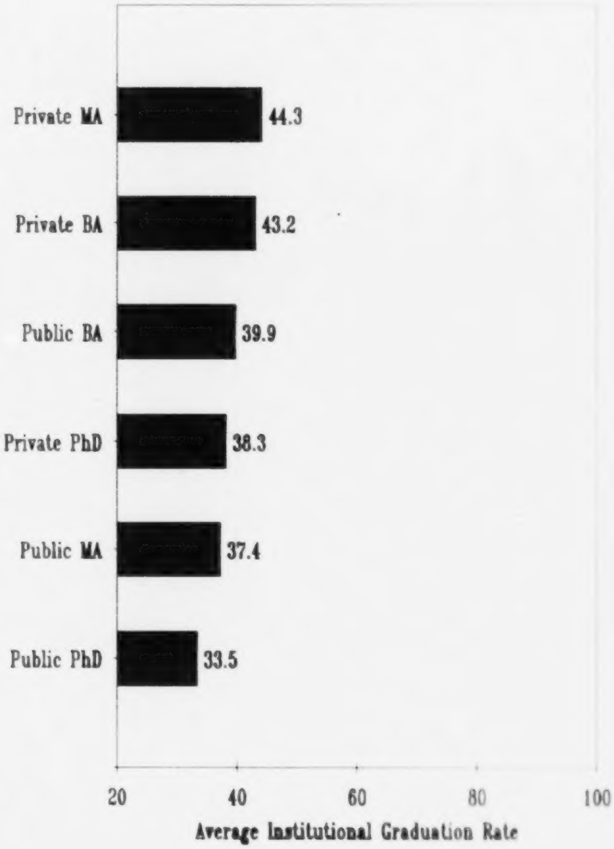
Traditional. There are 594 colleges and universities awarding the bachelor's degree that report traditional admissions policies. Of this total, 179 are public and 415 are private. They enroll a major of their freshmen from the top half of the high school graduating class.

The average institutional graduation rate for this group was 49.9 percent. By institutional control and degree level, average IGRs ranged from 38.5

Institutional Graduation Rates for Traditional Institutions by Level and Control 1997



Institutional Graduation Rates for Liberal Institutions by Level and Control 1997



percent at public universities awarding the PhD to 54.9 percent at private universities awarding the PhD.

Liberal. There are 234 institutions that practice liberal admissions policies. Of these 70 are public and 164 are private. They report that they admit some freshmen from the lower half of the high school graduating class.

In 1997 their average institutional graduation rate was 41.4 percent. The range in IGRs was from 38.5 percent at public PhD awarding universities to 54.9 percent at private PhD awarding universities.

Open. There are 108 institutions that practice open admissions policies and admit all who apply for which they have capacity. Of these 43 are public and 65 are private institutions.

In 1997 the average graduation rate for these institutions was 37.7 percent. Within this group, the average IGR ranged from 30.2 percent at public colleges that award the bachelor's degree, to 47.3 percent at private institutions whose highest degree awarded is the master's degree.

Changes in Graduation Rates

The continuity of the data ACT has collected and reported since 1983 invite comparisons of IGRs over this time frame, with controls for institutional control, degree level and academic selectivity. With the exception of the Census Bureau's reports over time on school enrollments and educational attainment, we know of no other comparable time series of data on college graduation rates. The ACT data is unique in the detail it provides on graduation rates since the mid 1980s.

The chart on page 7 shows changes in average institutional graduation rates between 1987 and 1997 in public institutions classified by degree level and academic selectivity.

Over the last decade, average 5-year IGRs increased in four groups of public institutions and declined in eleven others. Generally, average IGRs increased only in the most selective public institutions, and declined in the least selective institutions.

The significance of the above finding cannot be overstated. Academic selectivity is highly correlated with family income according to data collected in the annual survey of American college freshmen by UCLA. Average family income is highest in the most selective institutions (both public and private), and lowest in the least academically selective institutions (regardless of control).

Thus, these data on IGRs strongly suggest that 5-year institutional graduation rates increased among, and only among, students from the highest family income backgrounds in public institutions. At lower levels of family income, graduation rates declined, and they declined the most for the students from lowest family income backgrounds between 1987 and 1997.

The chart on page 8 shows changes in 5-year IGRs at private colleges and universities classified by academic selectivity and degree level. The results are strikingly similar to those for public institutions. Average institutional graduation rates increased for, and only for, the most selective institutions. For less selective private institutions, average IGRs declined, and they declined the most for the least selective PhD granting private universities.

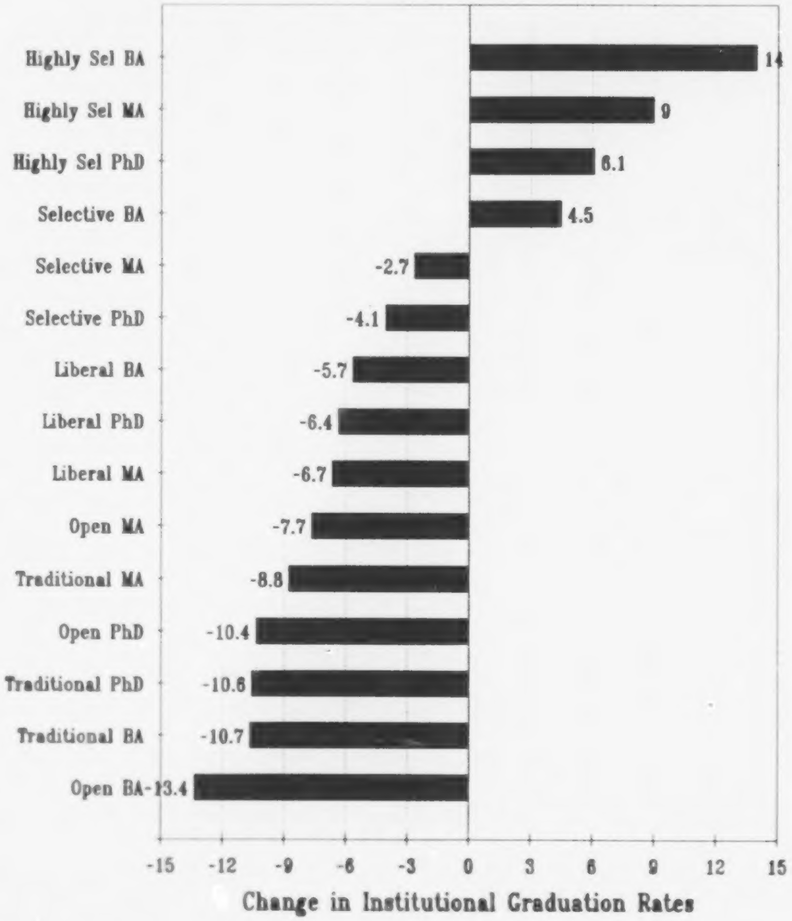
There are some small differences between the data on changes in IGRs between public and private institutions that are still important.

- The increase in IGRs at the most selective institutions was far greater among public institutions than among private ones. Thus the wider gap that existed in 1987 closed somewhat by 1997.
- However, as the chart on page 1 of this issue shows, generally public institution IGRs declined far more than they did in private institutions between 1987 and 1997.

We have also examined IGRs, and changes in IGRs, by degree level, with interesting results. Generally, across institutional control, IGRs vary only little. In 1997 IGRs for bachelor degree granting institutions averaged 53.5 percent, compared to 51.0 percent at MA granting institutions and 54.7 percent at private PhD granting universities.

However, between 1987 and 1997, there appears to have been a great deal of "degree inflation" in both public and private higher education. The number of colleges where the highest degree awarded was the BA declined from 589 to 472. The number of MA granting institutions increased from 575 to 642, and the number of PhD granting universities increased from

Change in Institutional Graduation Rates
in Public Institutions by Level and Selectivity
1987 to 1997



263 to 342. This upward shift in degree level may have been achieved at the expense of undergraduate IGRs. Between 1987 and 1997, the average IGR at the BA granting colleges declined by 1.2 percent, by 3.9 percent at the MA institutions and 5.2 percent at the PhD universities.

Summary

This analysis has examined data on 5-year institutional graduation rates at institutions that award the bachelor's degree. The analysis has found that average IGRs have generally declined since 1983, and more so at public than at private institutions. The analysis also finds that IGRs are strongly related to the academic selectivity of the institution. Average IGRs are highest at institutions that enroll freshmen from the highest ranges of their high school classes, and lowest at institutions that are least selective.

Between 1987 and 1997 average institutional IGRs increased among the most selective institutions, and declined among all others. Because high school class rank is highly correlated with family income, this implies that student graduation rates within 5 years of admission have increased among the most affluent, and declined for students from all lower family income backgrounds.

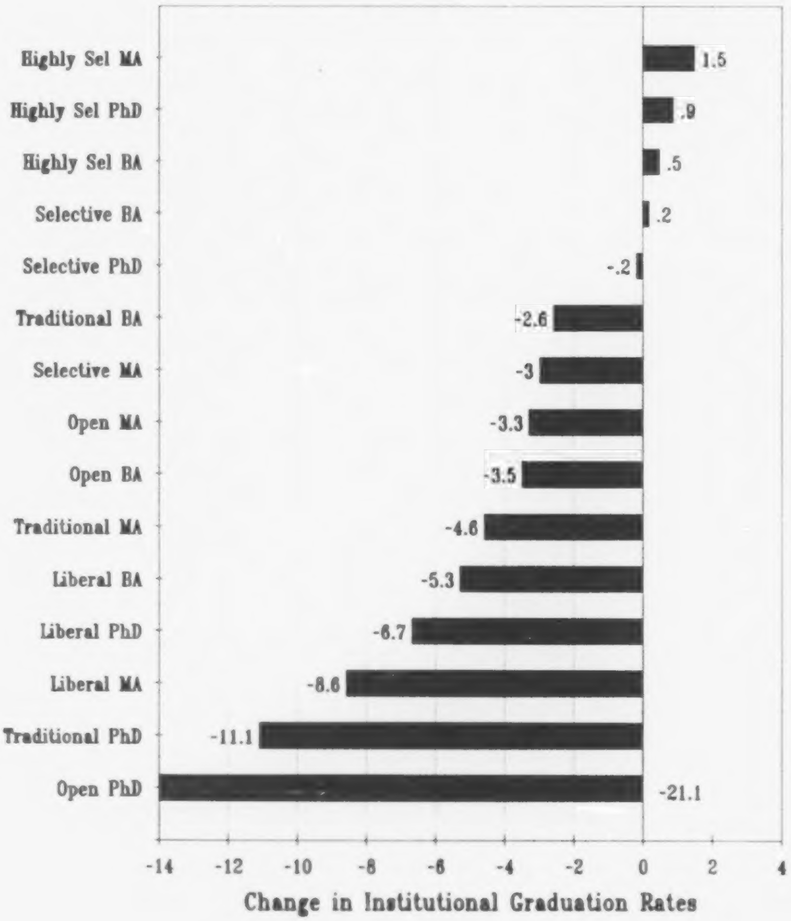
Finally, data from the Current Population Survey do not suggest that college graduation rates have declined for those who start college. Rather, the Census data suggest that four-year college completion rates have been flat for the last twenty years.

Thus, these data suggest that either or both of two things may be happening.

- Low- and middle-income students may be taking longer to complete their studies because of institutions' inabilities to provide courses when students need them to complete their studies in a timely fashion, or because students may be working more to avoid educational debt. Either explanation is caused by underfunding either public institutions and/or student financial aid programs.
- Students may be transferring from one institution to another at increasing rates. There is good recent evidence that this is a common practice among freshmen entering four-year colleges, but there is no trend data to study the question.

Ultimately these data challenge the popular political notion of bachelor's degrees in three years. The trends are going quite the other way for reasons caused in substantial part by the sharp erosion of public financial support for higher education during the 1980s and 1990s. This erosion takes the form of declining state appropriations, higher tuition charges to students, and misdirected student financial aid. Public policy makers would do well to consider their own culpability in declining 5-year institutional graduation rates reported here.

Change in Institutional Graduation Rates
in Private Institutions by Level and Selectivity
1987 to 1997



Getting better . . . *. . . but . . .*

State Appropriations for Higher Education Increase Again for FY1998

State appropriations for higher education edged upward again for FY1998 over FY1997--the largest increase reported in the 1990s. This increase exceeded inflation. And the higher education appropriations increase exceeded the state general fund increase; thus, higher education's share of state general fund appropriations increased in FY1998 over FY1997.

However--and there is always a however--higher education's increase was less than the percentage increase awarded to K-12 education and Medicaid, and surpassed only corrections. Higher education remains a relatively low budget priority in most state budgets.

These and other findings were recently reported by the National Conference of State Legislatures (NCSL), based on a survey of members of the National Association of Legislative Fiscal Officers. The NCSL survey was conducted during the summer of 1997. The preliminary survey results are based on the responses received from 45 states. States that had not completed their budget process at the time of the NCSL survey and therefore are not included in the preliminary results include Alabama, California, New York, North Carolina and Wisconsin.

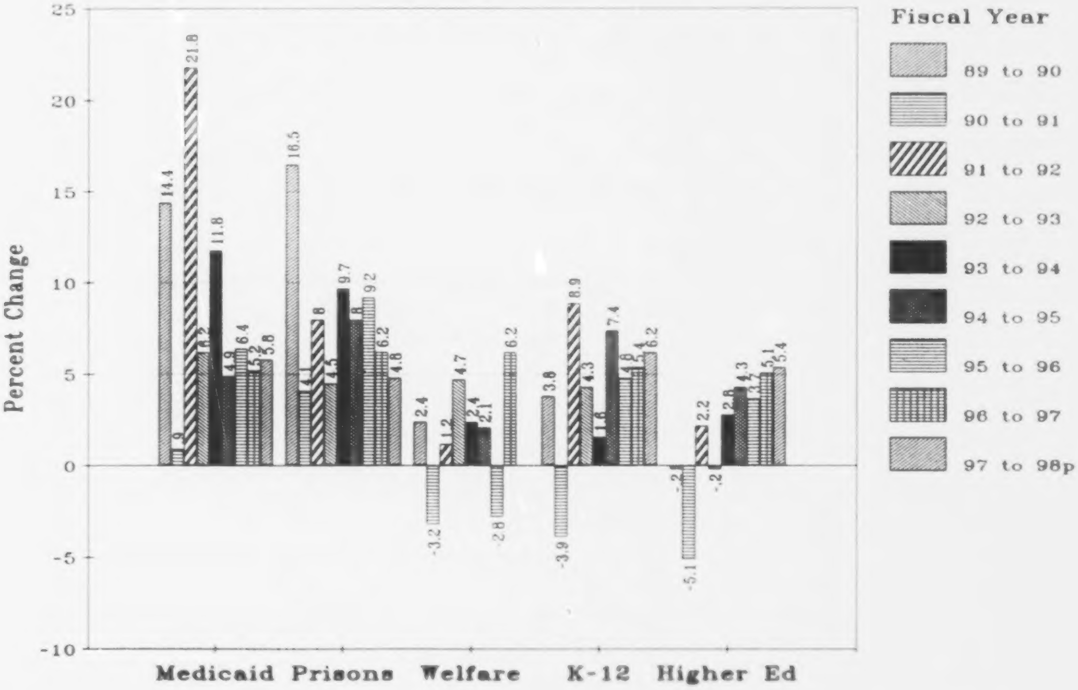
Perez, Arturo. *State Budget and Tax Actions, 1997.* (August 1997). Denver: National Conference of State Legislatures.

State Revenues

The strong national economy continues to generate strong revenue streams for states in the 1997 and 1998 fiscal years. These strong revenues have enabled states to save, to spend and to cut taxes.

At the end of FY1997, state general fund ending balance was 8.7 percent of spending from general funds. This was the highest ending reserve since FY1980 when the total state balance

Annual Changes in Major Expenditure Categories
from State General Funds
FY1990 to FY1998p



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was 9 percent. Some states call these "rainy day funds." Twenty-seven states had general fund balances above five percent, and 14 of these were above ten percent. Nine states accounted for about 60 percent of these surpluses: Alaska, Florida, Indiana, Massachusetts, Michigan, Minnesota, New Jersey, Ohio and Texas.

Two states reported ending balances of zero, and none reported negative balances--starkly contrasting with the troubled years of economic recession early in this decade.

Spending the Surplus

Governors and legislators in the 45 states participating in the NCSL survey found many uses for their budget surpluses. (Note the absence of redressing some of the damage done to higher education funding by states over the last 18 years.)

- Twenty-one states reduced taxes, including permanent income tax cuts, increases in tax credits, inheritance tax reductions and elimination of some surcharges.
- Eighteen states socked away money for rainy days, some sizeable amounts.
- Eighteen states targeted programs for one-time or unusual funding increases. These targets included education (general aid, new computers, special education, textbooks), local government, environmental cleanup and economic development.
- Sixteen states spent surplus funds for capital projects such building renovations, transportation projects and education buildings.
- Other uses of state surpluses included reducing state debt, increasing other state reserve funds, pay raises for state employees and delaying collection of some taxes.

Projecting Revenues and Appropriations for FY1998

For the states participating in the NCSL survey, FY1998 revenues were projected to grow 1.9 percent over FY1997 collections. This modest expectation results both from enacted state tax cuts as well as an expected low national growth rate.

FY1998 general fund appropriations are expected to increase by 4.7 percent over FY1997 expenditures. This exceeds the inflation rate of 2.9 percent projected by the Congressional Budget Office. Four states project that FY1998 spending will drop below FY1997 levels.

Ranked by percent increase in appropriations, higher education generally remains below top state budget priorities. Of the major state budget categories:

K-12 education	+6.2%
Medicaid	+5.9%
Higher education	+5.8%
Corrections	+4.8%

Due to the redesign of the nation's welfare system beginning with Congressional action, Aid to Families with Dependent Children (AFDC) has been replaced with Temporary Assistance for Needy Families (TANF). This revolutionary change means that states are having some difficulty finalizing their TANF appropriations numbers. They will be reported later this fall in NCSL's final report.

Higher Education

For the 45 reporting states, higher education general fund appropriations increased by 5.8 percent in FY1998 over FY1997. When earmarked funds are included, the increase drops to 5.4 percent.

The year-to-year appropriations increase (or decrease) are shown in the chart on the preceding page. Clearly, higher education appropriations fared better in FY1998 than they have in any other year since the beginning of the decade. The chart suggests how important economic expansion and prosperity are to higher education's success in state appropriations processes.

Nevada had the largest percentage increase in state appropriations for higher education at 32.7 percent. This extraordinary increase was attributed to rapid enrollment growth, supplemental finance aid, improvements in technology, financial system implementation and distance learning initiatives.

Four states reduced overall funding for higher education in FY1998 compared to FY1997. **Alaska** reduced its higher education appropriations by two percent as a part of a broader state plan to reduce spending over five years.

* * *

By this measure, higher education financing in the states has improved steadily throughout the 1990s. From sharp reductions in the early 1990s, annual percentage changes have become positive and greater almost steadily along with the economic expansion. If this were the only picture, one could rejoice. But it isn't.

Controlling for personal income, state tax fund appropriations have declined throughout the 1990s (and 1980s too). As was reported in OPPORTUNITY in last November's analysis of state tax fund appropriations data collected at Illinois State University, between FY1990 and FY1997 state tax fund appropriations declined from $9.74 per $1000 of personal income to $7.65--a 21 percent reduction. We will update that analysis in the November issue of OPPORTUNITY.

An Indentured Generation of Students? A Critical Examination of Student Debt Load

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Editor's note: The following is an abbreviated version of a paper prepared by Prof. Patricia Somers of the University of Arkansas at Little Rock and Prof. Mark Bateman at Baylor University. Prof. Somers presented this paper at the Financial Aid Research Network conference in Seattle in May 1997. We present it here because we so rarely ask students what is on their minds. Not only have Profs. Somers and Bateman asked students about an important public policy question, but they have organized the responses of their students into fifteen themes that help illuminate issues. As indicated, Profs. Somers and Bateman will use these responses to help guide their future research. We wish them well in that endeavor, and thank them for the chance to share their work here.

> *. . . and if the student loan people get ahold of me [my e-mail address will be] homeless@cardboard.box*
> - student in interview

Introduction

There has been speculation that high debt burden influences students to choose majors and careers with high expected incomes. In the mid-1980s, attention was focused on the debt load of law and medical students. Thus interest was prompted by two main concerns: the number of law and medical graduates who elected to file for bankruptcy shortly after graduation to escape heavy educational debt load and the concern that these graduates shunned lower-paying jobs, often in public service, in favor of positions in higher paying specialties. The research of this era was quantitative and sampled primarily law and advanced health care students.

However, there has been a dearth of research in the role debt load plays on student decision making. In fact, the broader issue of student loans and educational decision making has not been explored. As Campagn and Hossler state, "a systematic summary of the effects of student loans on the college choice process has not been written." Indeed, in many instances, we can only speculate about the effects of loans and loan indebtedness on student decision making. Such speculation is a potentially dangerous and risky basis for public policy.

There are several potential explanations for a lack of research on the impact of loans on student decision making. First, we believe much of the research agenda has been based on the priorities generated by Congress. Over the past decade, there has been increasing concern over default rates. As a result, the General Accounting Office has been interested in the analysis of data which can be used to support legislation aimed at reducing the numbers of students who default. Further, the concerns over balancing the federal budget in recent years has shifted the discussion to the need and funding levels for loans, and away from the impact the loans have on students. Thus, there is a need for exploratory studies on indebtedness and student choices.

The purposes of this exploratory study were to: explore how debt load influences student decisions about institution, major, career, family, and further education in the 1990's; make recommendations to policy makers, colleges and universities, and lending agencies based on the results; and begin a series of studies, using case studies, questionnaires, and national databases examining debt loads.

The study used the following research questions:

1. Does the perception of debt load influence student decisions about where to attend college and full-time attendance patterns?
2. Does debt load influence decisions about academic majors and career fields?
3. Does debt load influence student decisions on post-graduate training?
4. Does debt load influence family decisions?
5. What are the policy implications of student debt load for institutions, state governments, federal aid policy, and loan agencies?

Method

In the spring of 1996, focus groups were held with upper division undergraduates, students in five-year programs, and new graduate students. Rather than choosing students for the interviews, we selected entire classes. Thus, we interviewed students participating in the teacher education seminar, capstone course in business, and required courses in other fields. Because of this approach, we interviewed a cross section of students, both those with loans and those who had not taken out loans.

Thirteen focus groups were held at 5 public universities. One hundred and seven students participated. The schools were all comprehensive or doctoral institutions. One focus group had only African American students as participants.

Of the students who participated, 58.9 percent were females and 16 percent were minority group members. The average age for the students was 27.3 years, and the range was 21-47 years old. Most (75.8 percent) were independent financially.

Almost three-quarters of the students (72.1 percent) had taken out student loans. The average loan total was $11,579, with a range of $1800-75,000. The two most popular methods of financing their educations was loans and working while in college (74.0 percent). About half of the students had grants (54.2 percent) or scholarships (51.4 percent). One student had prior student loans discharged in bankruptcy.

Findings

Given the paucity of data on debt load, especially in the 1990s, this study seeks to represent diverse opinions on student loans. We see this research as the beginning of a series of studies on debt load that will use case studies, questionnaires, and national data bases. Thus, this paper gives a broad overview, summarizing hundreds of pages of transcripts from focus groups.

Through extensive use of quotes, this papers seeks to "give voice" to students, and to inform further study. Fifteen themes emerged. While we chose these 15 themes, these are not discrete. There is considerable overlap between the themes.

1. Pre-college Consideration of Financial Aid (What, me Worry?)

I thought you had to pay them all back at once. Like when you graduate you had to pay them all back.

I think I was pretty naive. I though I had like $2000 in savings, and then I had scholarships. Just being 18 years old and right out of high school, I thought that, oh, that will be fine, that will pay for all of it. Little did I know that the tuition scholarship was not about to cover it.

When I was in high school, I always thought about college and always thought my parents would be there to take care of it for me, but my parents are deceased . . . when I went to college the first time, my grandfather paid for it. Then, I stopped. Since I've been back, I've had to take out loans.

If you tell somebody [in high school] *undergrad is going to cost you $16,000 to go to school, first of all, they'd say, well, am I going to be smart enough to make it through? I've never seen that much money, I've never had that much money in my life.*

When I was in high school, grants were the big thing and so it never occurred to me that I would have to pay anything for college.

I used to see loans as the rich person's supplement to their parents paying for their education.

In high school, I really just knew that I was going to college. I didn't know how and I don't know if they really had any programs that told you how much it was going to cost. If they did have them, I didn't attend them. I knew it would cost money to go, but I had no idea how much and I don't remember seeing any figures or anything like that. I just knew my friends were going and I was going to go.

I didn't know that student loans existed.

Our high school counselor didn't know anything about financial aid. Our English teacher had to tell him.

Most of these students were in high school during the 1980s when colleges became much more sophisticated about marketing their institutions and much savvier about awarding aid. It's both sad and disheartening that the expensive messages that colleges were sending prospective students in glossy viewbooks and college nights didn't register.

2. Influence on College and Academic Choices (The Three Ps of Choice: Price, Price, Price)

We found students very aware of college costs. Some made decisions about which institution to attend and what to major in based on financial considerations.

[This university] *was the closest school and since I drive 45 minutes a day* [to get here] *it was feasible;* [this university] *doesn't offer a degree in Theater. I had to change my goals* [and major in] *public relations.* [Later,] *I believe that the cost of grad school will keep me from enrolling.*

Cheap is important. I would have

considered getting a medical degree if the debt load was not so tremendous. I just want to be able to find a job with a decent income.

. . . I cam here and . . . the first year I couldn't apply just because I hadn't established residency and I wasn't about to pay out of state tuition - it's phenomenal

I got an offer at another university for a three-fourths scholarship. It still costs less to go here. My wife is going to school right now . . . at a technical, junior college and the price is just right!

A few students were cost conscious and found alternate ways of financing their education:

I have always wanted to go to college. The cost of attending college really hasn't affected me because my mother works here, so I get to go free except for the books. I have always imagined myself being successful in life with everything I do, so going to college was a necessary step to be successful.

Two students indicated that they relied on grants rather than loans:

[Cost] *really hasn't influenced* [me], *because of grants and scholarships.*

I don't have much money. I depend on grants to get through college. I will have to get a loan to go to [graduate school].

And finally, one student in the study had no reservations about cost:

I would be happy here regardless of the cost because this is my first choice for a career and I wouldn't be happy anywhere else.

These comments indicate that students are acutely aware of costs, and know much more about price than aid. This price consciousness indicates that universities should be cautious about tuition increases, and emphasize net cost (tuition less aid).

3. Do Parents Pay? (Where are Mom and Dad now that I Need Them?)

One of the myths is that parents help support their children when they are undergraduates. The students we interviewed had mixed experiences:

. . . undergraduate, my parents paid for everything, so I didn't have to take up a loan. [But when I go to graduate school] *it's loan time.*

. . . there was no way I was going to get a loan for college. My parents had to pay for it. They had too much money, so there was no loan.

My parents will help me, I hate to ask them.

My brother [and I] *are both in school now and my parents can't afford to send both of us and pay all the costs involved, so now that I'm fixing to graduate, I have $15,000 in loans. Now, it's how am I going to pay this back, how long is it going to take to pay it back, what's the interest on it.*

My parents were retired my whole B.S. degree career, so I did it on my own.

Because of the intergenerational nature of the sample, two students reported family experiences with financing college. One student said her mother had to take out a loan for her own schooling, but now was able to help the daughter pay for college. A father of three college=age sons reported that they worked during the summers and took off semesters when necessary to make enough money to pay for college on their own.

4. Awareness of Debt Load (Call the Bankruptcy Attorney!)

Students exhibited lack of awareness about finances in general, and student loans in particular.

Oh my God, oh my God, oh my God!!!!! I can't pay this back. I can barely pay my rent and food with my salary. I should have gone to the JUCO and not [expensive private college].

Nobody really sat down with me and budgeted . . . I was thinking in terms of work study that paid so much per week . . . I needed some budget counseling.

I think it's [the interest payments] *a certain percentage per thousand. I briefly looked at some of them, I've seen anywhere from $50 a month up to $150, $200 a month. I'm not sure, I haven't looked at it lately. I'm kind of scared.*

On the other hand, a few students were very aware of the payback terms of their loans, consolidation loans, and the interest rate.

I paid all my interest up front. I've been paying interest the whole time and the way it's set up is all I got to do is pay the principle.

I think mine [loan payment] *is going top be around $200 a month. I don't know for how many years.*

Virtually every student knew the conditions under which they could defer loans and the grace period. One person described the strategy that his son uses:

He looked at the pros and cons of student loans, where he would go to school, if he could continue to afford to go without student loans. If you lay out a semester, the loan liability begins. {He just keeps going part-time] *semester after semester.*

5. Life Decisions (The House without the House Note)

Students were mixed on how their debt load would affect their life decisions after college. Many students expressed trepidation about handling the loan payments:

I won't be able to buy a car or a house right away. This [student loan payments] *is just like having a house note without the house.*

The psychology of it seems to be that if you paid the same amount for a car, you would have it to drive every day. If you pay three times as much for a house, you're in it every day. So the fact is that you don't have to pay for it until after you use it. So that kind of hurts a little.

In another sense, you're paying before you use it because you're paying before you have the added benefit of the degree and the added earnings that you hope that will bring.

I'm figuring $20,000 a year here [for graduate school], *so that's about $80,000. I want to keep it under $100,000. That's scary, that's a house.*

In some neighborhoods its a house and a car.

Like I said, I'm already in debt, I'm just going to have to watch out what I buy and purchase. It's going to be hard for me, I like to shop.

Two students expressed reservations about marriage:

I would not have married the woman had I known she had defaulted on $30,000 of student loans [one divorce and one bankruptcy later].

I'm getting married in June and she has no loans . . . [she's going to] *pay for everything. She's bringing all the stuff and* [I'm] *bringing all the debt.*

When asked about consumer purchases, students had definite plans to curtail their purchases. When asked how the student loan payments would affect their future finances, they responded:

Divorce.

Not a new bass boat.

Oh, yes. It's going to affect the way we live, yes.

[We'll wait on] *cars, house, baby.*

I thought when I graduate, I'll get a new car. Then you start adding it up, not yet.

I've got a truckload of debt.

[The loan payments] *are like a house note without a house.*

Students felt considerable pressure to quickly land a high-paying job, and had ideas on how to temporarily earn more money in order to pay off their loans.

I think for health systems, the highest paid jobs are there, if you want to go, in the Middle East. You don't have to pay taxes. You do have to stay pretty much on the compound. Five years working as a expatriate in the Middle East, and you can do very well.

. . . there's a traveling position where we can be a traveling therapist and make more money. But, you're on the road more often, but you don't have to pay housing costs, so basically all the money you make goes into your pocket . . . I don't want to have this loan for thirty years, I want to pay it off.

I'm gonna try to maintain my [student] *lifestyle so I can be able to pay that thing off. So I can go on with other things and not have that debt for the next 10 to 20 years.*

I'll be more likely to look for a job faster . . . I'm going to owe $25,000 and I know I have to start paying it 6 months after that graduation date, so I want to have a job.

If I had to repay student loans once I got out of school, I think I would probably be taking the first job I came across that had a decent salary. You worry about whether you can make the payments, car payment, and too, you have rent, utilities . . . It's sad we have to go to school and it's so expensive. I have a problem with that.

Having a loan payment is like having an additional car payment. It's about the same as our car payment, so if you're going to pay all those cars at once, you have to have a little more money.

Virtually all students reported that their debt load would affect their financial decisions after college.

6. Graduate and Professional School

Students were mixed on their plans for graduate school. All reported worries about how they would finance their education, whether or not they planned to attend immediately or defer their plans for additional education.

I'm probably stupid, but I'm the only one that wants to do the opposite. I want to pay off at least half of the undergraduate loans and then go to law school.

I'm saving money right now to continue my education, hopefully at least pay a big tuition bill, so that affects what I do because I know I have to save so much money to pay for my tuition . . .

[I'm] *looking for a career that pays well to repay* [my] *loans and a graduate assistantship to help* [with] *the cost* [of graduate school].

Because of my finances, I will probably delay getting a master's degree for a few years so I can work. My husband and I have debts (home, car, etc.) that I need to pay off. After we get "caught up," I'll go back to college.

[the undergraduate cost] *has not played a major role* [in my decisions] *to this point.* [However,] *I'm sure money issues will determine whether I'll go to graduate school and where.*

I would like to continue my education, but it may be after I pay off my undergrad loans. I would like to take more classes at times, but I don't due to the cost.

If I have to take one out [a loan for graduate school], *I probably won't go. I'll just wait until I save the money or try to borrow it from someone else.*

Depending on where you go as an undergraduate, you can come out of medical school with $150,000-200,000 worth of loans. That's got to be really staggering, put you under a lot of pressure.

Well, I am getting married in May, so, I had to kind of look down the road. He's planning on going for a master's degree . . . we're probably going to have to take out a loan for that. So, it pushes the question of family way down the road . . .

Everybody I've talked to who is in grad school, they've got debts. When we talk about what we want to do, we're not talking about the costs of the loans. We're talking about this is what I want to do, or I want that school, or I want money, not the cost of the loans.

A good part of it [paying for master's degree] *will be in true loans. I'm going to have to take loans . . . it's almost $100 an hour for that program. It's gone up considerably.*

I'm going to have to take out loans because I'm wanting to apply to med school this fall. . . regardless, the way I look at it, if that's what I want to do, then I'm going to do it . . . I feel privileged to get in, so whatever it costs, if I get in, than that's what I'm going to do.

The one thing these responses do have in common is anxiety about how to pay for graduate or professional school. Some students will wait until they have saved money before embarking on further schooling, while others will plunge in immediately so as not to lose momentum, no matter what the cost.

7. Aid and Minority Students (Forget the bootstraps, I don't have any boots!)

Minority students in general expressed an aversion to borrowing. These quotes are indicative:

I don't like debt a lot because it puts me in mind of sharecropper situations and I came from a line of sharecroppers, where these people always own you because you always owe them. You can't go very far from them. However, in all the loans and credit cards,, cars, and so on, the one that I find least painful is actually educational loans. It's the lowest interest rate, it's the fairest, and I got something that was really of value as opposed to my car.

Taking out loans is intimidating. But I know if I set out of school, I'll pay a lot more.

Another student expressed the fear that public policy on aid is heading in a laissez-faire direction:

They're saying, pull yourself up by your boot straps. Well I ain't got no boots on. You're the fellow with the boots, you pull yourself up. I need some boots first.

8. Maxing Out on Credit Cards (AMEX, Don't Leave for School Without it!)

One of the most surprising things we discovered was how students used credit cards to pay for college costs, sometimes using credit to avoid a student loan:

Actually, I've charged my tuition, I've charged my books, I charged my food. [Even with] *the amount of loan money I'm going to get this semester, I'm still gonna be $100 in the hole, and that is just rent, electric, and phone. That's not including food. That's how I'm eating this semester, by charging it on my credit cards. So, you get real good at playing the interest rate game on credit cards.*

My loan pays for my child care . . . What am I supposed to do, leave the kids on the street? My credit cards pay for food. I can live on macaroni and cheese, but my kids can't.

Why do students use credit cards rather than student loans? Desperation. You don't have to do paperwork. Avoid the confusion and headaches. It's easier. I know one person who had to because they didn't get their financial aid on time, had to wait about two months, so they had to pay for school and charged it, and then by the time the money came around, they spent the money on something else.

My brother charges it not because he wants to, but he doesn't have any other choice. We're an upper-middle class [family]. *We don't have money to send two kids to college, but we have too much money to get a loan.*

Instead of saying, I'm gonna take out a student loan, they just say I'm gonna *put it on my credit card.*

I know students that take out a loan and by the same token they'll still charge fees on the credit card, and they go out and invest money . . . Apparently it works out that they break even.

I always say you can tell who the freshmen are because they push the pull doors, pull the push doors, have umbrellas when it's raining . . . and stop at the credit card tables in the student union.

Students report that it is extremely easy to receive multiple credit cards, and max them out their first semester in college.

9. Trying to Avoid Loans ("Jist' a littl' Bit)

Many students enter college with the vow to not take out student loans, only to see their resolve to stay out of debt crumble:

It was a big consideration, I think it was a pride thing. I wanted to get through without the loans, but I also realized it was impossible.

I thought I'll borrow just a little bit. Now, it's like, oh, I'm gonna be in debt, so I'll just borrow some more.

I only had to take out a loan my last year in B.S. school because I totaled my car.

The expenses are dirt cheap [here], *but what is so funny is that we're all sitting here taking out loans because we can't handle it.*

My perception was . . . that loans were taken out by people who couldn't get grants . . . But then I realized that the only way I could live and go to school was to take out loans, so I took them out. I'm digging myself out of the ditch now . . . I realize that loans aren't just for the people who couldn't get grants, they're for the people who are actually trying to go to school and live and survive.

A lost of people don't want to have to look at borrowing money. So, when you get out and make money, you have to owe. And that deters a lot of people.

These quotes indicate the lengths that students will go to in order to avoid loans. Some students are able to go to undergraduate school without loans:

I'm not in the same boat as most of y'all . . . because I was out of school for 10 years before I ever came back to college. I worked for a while, put back some money, plus my parents gave me some money. Then I was on scholarship during all my undergraduate.

I kind of thought I would have to . . . just because I thought that everybody had to have loans to go through school. My mom had to have a loan to come back to school. But, I had a full scholarship because of my grades in high school. So I didn't have to take any out for undergraduate . . .

So far I haven't had a loan, though I went through about $20,000 of savings which is pretty well exhausted. At my age, I'm gonna be missing about five years of work . . . and I'm avoiding it [loans] *as much as possible because I really need to be building up a retirement once I get started and not paying off loans.*

Almost 18 percent of the students in this study have received no student loans.

10. University Responsibility (The "U" as Used Car Salesperson)

The students felt misled by institutional admissions and financial aid offices. Some of their statements came close to accusations of "bait and switch" tactics:

Those admissions officers are just like used car salesmen.

I don't know about y'all, but when I went and talked to people about coming to college, when I got my first scholarship, they [the university] *told me that when you get into . . . school, there's gonna be all kinds of scholarships and money available and there's not.*

They'll [the university] *will loan you all the money you want.*

I have no idea what my options are. The university never told me anything. I took loans because they would pay the tuition.

With the Financial [Aid] *Officers, I don't think they're using their resources. The universities that I've dealt with, the first thing they want you to do* [is borrow money] *especially now since all direct loans go through the schools and they're making the money off the interest.*

. . . [it's] *the same with all schools handling loans directly now. I don't think you get* [information about other types of aid] *from your university financial aid office, because it turned into a money-making proposition for them.*

These quotes are indicative of the students' attitude toward the university, particularly the financial aid and admissions offices. The students believe that scholarships and other aid are plentiful, but they feel tricked when they only qualify for loans. Further, they take the rather cynical view that the universities are doing this deliberately to make money off direct loans.

11. Supporting a Family on Financial Aid (It's Macaroni and Cheese Again Tonight, Kids)

Students with families, particularly single mothers, had a particularly difficult time living on the estimated student budget. Most took out the maximum amount of loans.

Most of us have families and raising them and all, and also we're older than the bulk of the crowd going to college. Those people are fresh out of [high] *school and they're still under mommy and daddys' wing and don't have any big responsibilities. But we all had responsibilities when we started this.*

[I] *went back* [to school] *and my loans are going to pay for my day care, which is over $700 a month.*

And if you have kids, it's a little worse too, because there's lots of expenses. Doctor bills.

Special formula.

We're both going to school and neither one of us has insurance.

My car is ten years old and has 177,000 miles on it. I need to make it last several more years . . . I don't mind eating macaroni and cheese every night. But with my kids, I don't also want to wait until they're twelve to take them to Disney. I'm trying to balance between being able to do things with my kids because I don't have a lot of time with them right now. So, do I try to take out an extra loan so we can do things together? Even though I can't read a book to you tonight [because] *I have an exam tomorrow. No, I can't come with you to bed. So, at this point, I am tempted to take out a loan so I can say, yea, let's go to Discovery Zone on Saturday . . . there is an odd balance out there that I'm trying to achieve, and loans are working into it. We surely can get a pizza tonight, because I have to say no to so many things, that actually a student loan would allow me to say yes to something.*

If it wasn't for the loans, I wouldn't be able to go, 'cause my wife, she has a beauty shop. She doesn't make much money. She couldn't keep us going.

When I first started out, the first two years, I tried as hard as I could not to take a loan out. My husband was going to school,, too, and we were both trying to make life better for our son and after two years, I couldn't afford [it]. *Its embarrassing living poor, and finally, I had to take out loans. If that's what I've got to do to make life easier for my son later, then that's what I've got to do.*

Perhaps nothing sums up the problems of single parent students than the following exchange that took place in one focus group:

Student A: *If you have any little children that depend on you, then you've got to do something . . . you will do whatever it takes, I promise.*

Student B: *And I just thought you were waiting for the bus when I saw you standing on that street corner the other day.*

These poignant quotes indicate the very mixed feelings that students with children feel. They have limited funds and limited time. Their student loans cover the basic living expenses, child care, and at times, let them do things with their children.

12. Student Loans and Marriage (Just the Two of Us and My Debt)

Student couples also described having to take out loans to make ends meet:

If I would have known, I wouldn't have gotten married before I came to [school] *because it knocked me up a bracket as far as income, and I didn't get the grants, so I had to go alone. My first year, I got a lot of grants and scholarships. This year, I have an unsubsidized loan.*

I swore I would never take out a loan because we're still paying back my husband's $20,000 that he has from when he graduated. So, that's my biggest reason for not taking out a loan, because we're still paying his off.

It was easier for us to just go ahead and take out a loan instead of touching our savings. Instead of messing with any of the few investments that we did have, so just left those in place and then we'll incorporate.

It's not so much the tuition that I think people get the loans for, because the tuition is one of the lowest in the state. It's the lack of having a job or a full--time income that puts you back that you have to have the loan to subsidize living. That's just the way it is. It's not so much for school, it's to live.

13. Tradeoffs: Whatever it Takes!

Many of the students indicated that college was so important to them, that they had to make big tradeoffs:

I sold my house to pay for school and living expenses while in school. Cost did not enter into decision making. [This major] *is what I wanted to do, so I did whatever it took.*

It has taken me longer to complete my degree [because I work and go to school].

I have learned to live with a very large debt over my head, and adapted to credit card use.

I moved back to [this state] *so that I could afford school. I had to use my savings first, GI bill, but felt that I could borrow if I would need it.*

Without the loans, I would not be in school.

I came [here] *as a freshman wanting this profession and nothing, not even the money I would have to borrow, would keep me from reaching my goal because I knew it would work for me and society.*

I have worked full-time since the day after my graduation from high school, and because of this, my appreciation for money and time has been enhanced. I feel that because I have worked my way through school, my maturity has greatly increased, therefore making me work harder for my academic goals.

14. The Love/Hate Relationship with Student Loans

Students had mixed emotions about student loans that clearly surfaced during the interviews:

It cost a lot, but my husband and I have a child that is 4. We are trying to make a better future for us and our son. That's what's important. That's why we take out student loans.

I don't have just student loans. I have a truckload of debtload!

. . . boy, am I digging myself out of a ditch now.

If student loans were not available, I could not even consider attending college.

Fortunately, I receive Pell Grants that pay for my college. I am sure my outlook would be different if I had loans to pay back.

[Loans are a] *great burden with a fairly high amount of stress.*

[Loans] *have made me look for higher paying positions, but have also made attending college a reality for me.*

With loans, I had security (financial) and was able to do better. I get to pay them back now - and that won't be too fun!

[Loans have] *made me realize the importance of being dedicated to my studies so that I may realize the full potential of my education and get the best job possible.*

My banker loves to see us. Between my wife and I, we owe $60,000.

Out of 25 grandchildren, only two of us went to college. I am the only college graduate . . . and I was able to graduate only because of loans.

I have more freedom with student loans, I don't have to work full-time to afford school.

I hope to pay off [my student loans] *in full before I die.*

[Student loans] *are the price to pay to get into the Big Dance.*

[Taking out student loans is] *like playing football on Astroturf. When I'm tackled, my arm gets skinned up. I don't feel it during* [the game], *but afterwards, I have scabs or worse.*

I am an investment.

[They've] *cut people out of the system.* [The only way to attend college is to] *use student loans to live on.*

The benefits [of education] *far outweigh the cost* [in student loans].

15. Message to Congress (Go to WalMart Like the Rest of Us)

Some of the strongest responses we received were messages from the students to Congress. Much of the interviewing was done during or after the federal shutdowns in late 1995 and early 1996. Fearing that student aid programs would be cut, students were vocal in their opposition to this possibility.

First, students criticized Congress for their spending decisions in other areas, as these students indicated:

Stop giving our money to Colombia . . . We give so many countries so much money . . . I don't think we've put enough emphasis on education in this country.

. . . I don't get offended by us giving money to other countries, because I know that they would help us in the long run. What frustrates me is I was saying quit spending money on missiles we don't need . . . or weapons we don't need. And in the process, you're making the country ignorant . . . quit buying hundred dollar soap dishes for Generals - they don't need them. Go to Wal Mart and get them for $3 like the rest of us.

Its like we have nothing but buffoons in office now. They get in there and they're strictly self-serving. They work to propagate the good-old-boy system . . . like the Congressional pension, its ludicrous. They should have a pension that should be equal to something that you'd get in business . . . I think we're going to hit critical mass one of these days when there is no longer gonna be anybody there to pay the piper. You can't keep deferring things, like we're putting off now on the next generation.

The waste in the student loan program is a drop in the bucket. Go after the rest [of the abuse] *first.*

Students took Congress to task for their perceived shortsightedness on the student aid issue. These three quotes are indicative of student views on aid as an investment in society:

I think [student aid] is one of the best investments that they can make. They'll get it back in taxes tenfold.

. . . if I wasn't in . . . school, then I might be working at McDonald's and I might be able to support myself and my daughter, but I wouldn't ever be putting anything up above and beyond that. This way I'll be able to support myself and my daughter and pay a lot more taxes . . .

The students were very critical of what they perceived as abuses of the aid system. In fact, some advocated stricter criteria for aid:

I think there needs to be some kind of scholastic criteria attached to a lot of it. You have to make a certain grade point average to qualify [for aid].

They don't give you a loan for a house unless you are making the salary to pay the loan. So whatever your career choice is, they shouldn't allow you to take out more than what you can afford to pay back later.

Yes, if you're only going to be making $20,000 a year, then they shouldn't let you run up $50,000 of personal educational debt.

. . . we're talking about those . . . people who are milking the system, because one of these days, we'll be in that working class, working in that middle class and raising children with a house in the suburbs, and your tax dollars are going to be going for some person's education who is milking the system.

Students were bitter that they couldn't qualify for aid, despite their low-middle or middle income levels. They argued for more generous entitlement levels:

Everybody I talked to says . . . they [the federal government] *say we were too rich for a loan or too rich for* [a grant].

On the grants, make it a little more equal. You have to be low income or minority to get it . . . include everybody in that pie. Just don't pick a segment [of students] *and say . . . this* [grant] *is for you, but you can't have it.*

. . . you've got to put you money where your mouth is. If you're going to value graduate work, then put your money there too. Make it even, more balanced. Don't make it so out of proportion that you're killing the people . . . you're praising people for getting there [graduate or professional school], *but you're going to kill them getting them there. It doesn't show where your values are as a nation.*

Finally. two students voiced the opinion that government can't do everything. One said that this is a "mind set that needs to be eliminated."

We were surprised at the vociferousness of the responses in this category. Clearly, the students are fed up with politics in general, and all types of abuses in federal programs, including student aid program. Further, middle-class students who didn't qualify for aid were quite embittered. Several times, the topic of term limits for elected officials was mentioned as one way to stop the perceived callousness of career politicians.

Implications for Policy

While there are dozens of specific policy recommendations we could make, we are limiting ourselves to two broad categories. Since this is an initial, exploratory study, our purpose is to begin the discussion, rather than prescribe the solutions. First, we consider institutional policy and then public policy.

Institutional Policy

Very clearly, institutions (both public and private) are not doing a good job of educating students and their parents about the types of aid available and the conditions attached to student loans. Institutions need to seek new and creative ways to communicate with students and their parents regarding indebtedness. Students need assistance in finding their way through the maze of aid applications, financial planning, credit cards, and repayments. The already-overburdened financial aid office, however, should not shoulder all of the responsibility in this educational process. Admissions, Academic Advising, Career Planning and Financial Aid need to be providing integrated, consistent, and continual information about indebtedness. But, this educational effort needs to extend beyond this campus.

Public Policy

At the state level, educational policy makers need to orient and inform students and parents about financial aid. State higher education officials can work closely with school districts in this campaign. One effort that appears to be filling this need is the Indiana College Placement and Assessment Center (ICPAC).

States also set tuition and state grant policy. States need to examine whether their tuition/aid mix (low tuition/low aid, high tuition/high aid, high tuition/low aid, and low tuition/high aid) meets the objectives the state has set for higher education. One of the purposes of a high tuition strategy is to put some of these funds into aid. However, previous research is mixed on whether this works.

Federal aid policy also should be reviewed carefully. While access to higher education is an important goal, so are outcomes. If the low-income students who have access to higher education through loans are so overburdened by debt load that they fail to graduate or end up in bankruptcy court,the system has failed. Access is just one-third of the proverbial three-headed coin.

Second, federal policy makers should revisit the balance between grants and loans in the current policy calculus. Are these programs working as intended? What are the educational outcomes? Does the mix between grants and loans need to be reexamined in light of current student and societal needs.

Third, policy makers need to give serious consideration to the financing of graduate education. With the undergraduate degree now the "union card" for professional jobs, students are increasingly seeking an advanced degree and employers are seeking more advanced degree holders. Perhaps the access issue of the next century will be access to graduate education.

Fourth, more examination needs to be given to repayment options. Students who go into high-demand, low-paying jobs might be given loan forgiveness. Since the rate of return to students in lower paying career tracks tends to influence college and academic choice decisions, consideration should be given to basing loan repayment on the rate of return to the student. For example, the loan/grant formula might be different for the seminary student than the medical student.

There are many other specific recommendations that we could make that go well beyond the scope and page limits of this paper. Since ours is the first in a planned series of studies on debtload, these are broad-brush recommendations intended to begin anew the discussion about student indebtedness.

Recommendations for Further Research

We were surprised by both the volume and emotion of the responses we received. It is clear that additional research on student indebtedness begs to be done.

There are different units of analysis that can be used in the study of student loans. The student, the institution, the state, and the federal government can all be studied. The policy implications are different for each level. For example, if the federal government is the unit of analysis, no information on personal decision making can be gathered. Research is needed at all levels.

We see at least three more segments in this study of indebtedness. The first is to do case studies of students, institutions, and states. A questionnaire, based on this and previous research, should be developed and distributed to a large, national sample. Finally, existing data bases can be mined for information on debtload and student decisions.

Conclusion

The richness of the data from these focus groups demonstrates that there is more to decision making about student debt load than previously thought. Decisions are complex, and based on considerations ranging from having dependent children to being indentured to federal policy. The large number of themes, the strong emotions of students used to voice these feelings about financial aid, and the clear lack of understanding about aid options all compel further research.

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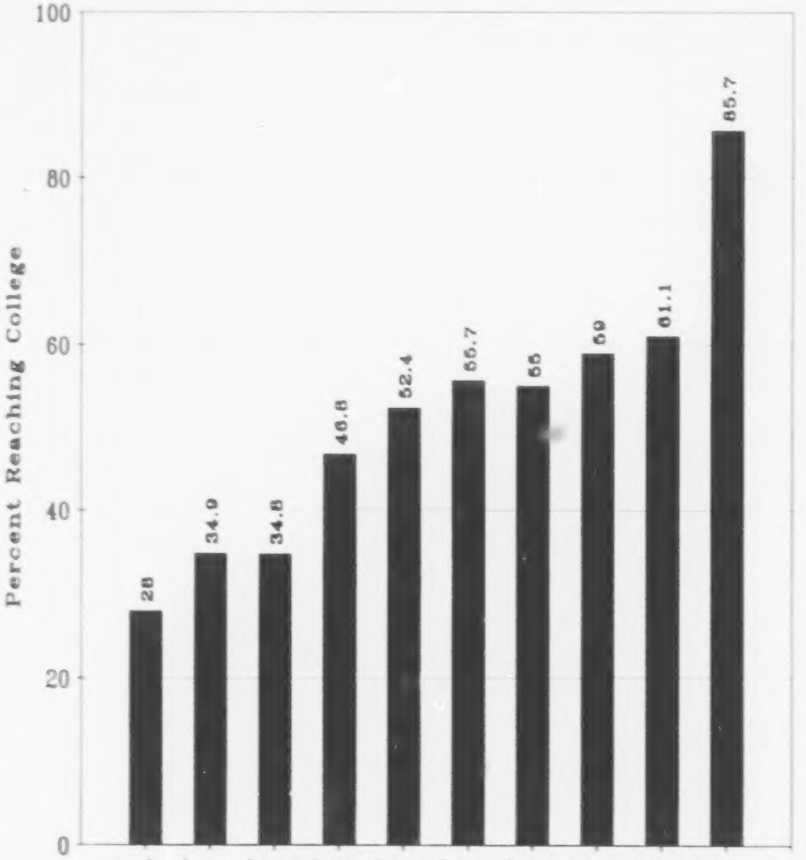
High School Graduation, College Continuation and Chance for College by Family Income 1995

Chance for College Among 18 to 24 Year Old Dependent Family Members by Family Income 1995



From its inception in the Higher Education Act of 1965, federal policy regarding opportunity for higher education has been focused on those from low income family backgrounds. Title IV of the Higher Education Act contains both the need-based student financial aid programs as well as the outreach TRIO programs that are targeted on students from low income and first generation family backgrounds.

The importance of this focus on family income has become increasingly clear as federal and state policy has retreated from historic recognition of gender and race/ethnicity as legitimate bases for recognizing disadvantages in student backgrounds. With the single (major) exception of President Clinton's misdirected Hope tuition tax credits, federal policy remains focused on limited income as a legitimate basis for determining need for federal assistance through outreach and student financial assistance programs.

Here we review recently released Census Bureau data on the enrollment status of 18 to 24 year old dependent family members classified by family income. The data were collected in October of 1995. They offer unique information on the status of educational opportunity for students classified according to different family income level backgrounds.

The results of this analysis show that educational opportunity remains highly unevenly distributed across different levels of family income. As the above chart clearly shows, a student fortunate enough to be born into a family with income over $75,000 per year has about an 86 percent chance of reaching college by the time they are 18 to 24 years old. In stark contrast, a student born into a family earning less than $10,000 per year has a 28 percent chance of reaching college in the same age range.

This directly challenges Americans' notions of equality of educational opportunity. As the analysis following this one makes unequivocally clear: welfare is determined by educational attainment. Those who have access to higher education have access to the highest incomes, and those who do not face low and declining living standards with no prospects for improving their prospects.

In this analysis, we review a portion of the Census Bureau data. We look at high school graduation rates, college continuation rates, and their product which is chance for college, all stratified by family income backgrounds of students. We look at these data over all, for males and for females, and for whites, blacks, Hispanics and those of other race (mainly Asians).

The picture that emerges is that family income remains an extraordinarily powerful measure of educational opportunity. Some important differences remain between genders and racial/ethnic groups. But generally, when family income is controlled for, the most striking differences in educational opportunity occur across family income levels. This leads us to the conclusion that family income remains a valuable toll for public policy to distinguish among students to identify disadvantage. And on the basis of that identification, the family income-driven programs of Title IV of the Higher Education Act are still, more than 30 years after passage of the Act, a solid basis for making public policy, designing programs, and funding them.

Were it not for the myopic, tunnel-vision of much current federal and state policy debate and action, this analysis would not be so urgently necessary. But unfortunately, socially destructive policy proposals are surfacing and being enacted, or laws and policy are being reversed in the courts. Therefore, this analysis goes back to basics. The directions taken by federal policy in the 1960s and early 1970s to focus on family income are confirmed by this analysis.

The Data

The information used in this analysis was collected by the Census Bureau in the October 1995 Current Population Survey. The CPS is administered monthly to a sample of about 50,000 American households, and gathers data on a wide variety of subjects. The October survey gathers important data on school enrollments, and the March survey gathers equally important data on educational attainment.

These two reports are published in the P20 series of Current Population Reports. Recently the Census Bureau has decided to print full reports only every other year. The 1995 survey results have been instead posted at the Census Bureau's website, beginning at:

http://www.census.gov

Search the site for school enrollments. The report containing some 83 pages of tabular data may be downloaded with free Adobe Acrobat software, which may be retrieved through a link from the Census Bureau's homepage.

Our analysis of these data is highly limited. We have focused on a small portion of the data contained in Table 15 of the complete report. Here, we are specifically interested only in dependent 18 to 24 year old family members. Table 15 arrays its data by the levels of family income reported in the charts on these pages.

This analysis looks first at high school

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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graduation rates by family income. Then, for those who have graduated from high school, what proportion continues their education in college. Finally, the product of these two rates measures the chances of reaching college by ages 18 to 24 for students from the reported family income ranges.

College participation, as used in this analysis, consists of three groups: those currently enrolled in college (as of October 1995), those no longer enrolled who have completed less than a bachelor's degree, and those no longer enrolled who have completed their bachelor's degree.

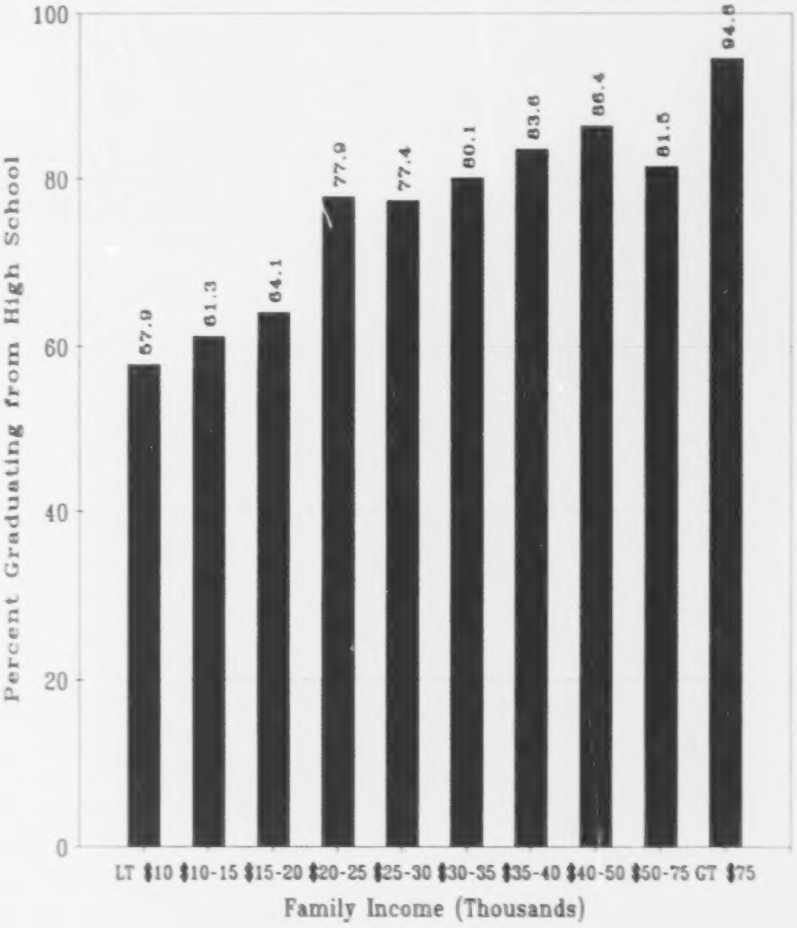
Chance for College

Getting to college first requires high school graduation. As shown in the chart on this page, in 1995 high school graduation rates generally increased with family income. High school graduation rates were lowest, at 57.9 percent among those who came from family incomes of less than $10,000 per year. Rates were highest, at 94.6 percent, among those who came from families with incomes of more than $75,000 per year.

In this chart and these data, there are two rather sharp breaks in the data. The first occurs around $20,000 per year in family income when the graduation rate jumps from about 64 to about 78 percent. The second break occurs around $75,000, when the graduation rate jumps another ten percent. Between these points high school graduation rates do not appear to be significantly influenced by family incomes.

Finally, the national goal of a 90 percent high school graduation rate appears to be met only by those from the highest family income range. Farther down the income scale, and especially near the bottom, graduation rates are well below the national goal.

High School Graduation Rates Among 18 to 24 Year Old Dependent Family Members by Family Income 1995



This is where program focus and resource support is most clearly called for.

The second step on the path to college is continuation of one's education in college following high school graduation. This analysis is limited to those who have graduated from high school. Thus, the disparities in educational progress at the high school graduation stage are further magnified.

In 1995 the college continuation rates ranged from about 48 percent of those who came from families with incomes below $10,000 per year, to about 91 percent of those from families with incomes of more than $75,000 per year. Generally, college continuation rates increased with family income, although between $25,000 and $50,000 there were no real gains.

Finally, the product of high school graduation rates and college continuation rates produced one's chances for college at each level of family income. The chart of these data appears on page 1 of this issue of OPPORTUNITY.

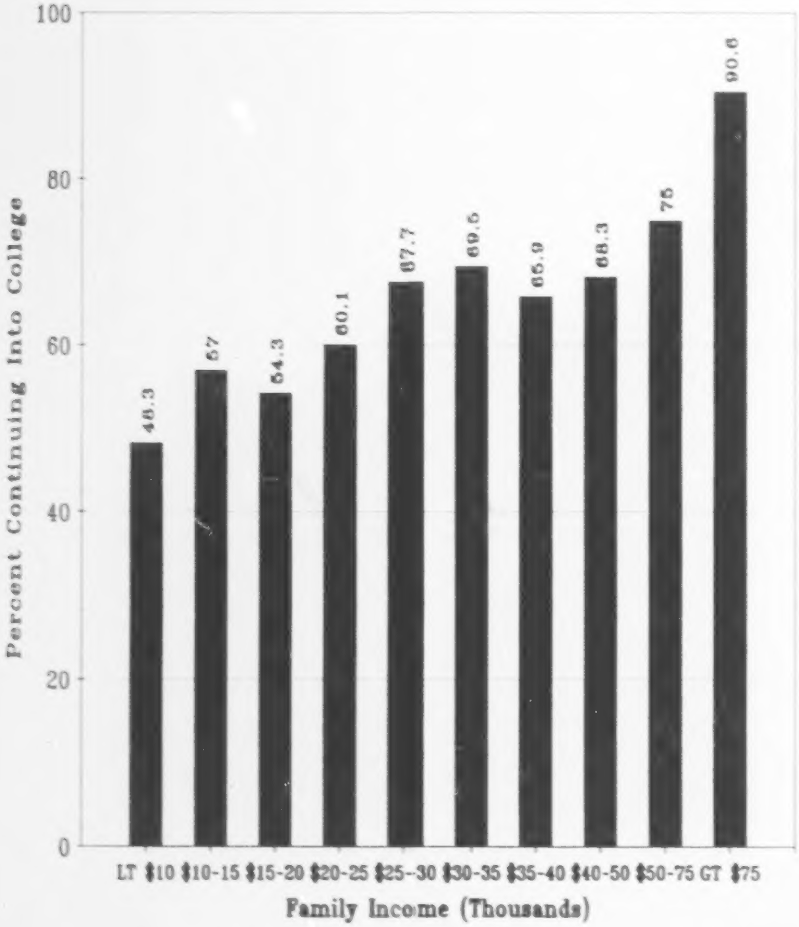
In 1995 a person's chances for reaching college ranged from 28 percent of those from families with incomes below $10,000 per year, to about 86 percent for those from families with incomes of more than $75,000 per year. Those from highest family income backgrounds were more than three times as likely to reach college as were those from lowest family income backgrounds. The differences in high school graduation rates are magnified further by the differences in college continuation rates across family income levels.

Chance for College by Gender

Given the basic display of data in the first three charts, we proceed to disaggregate the data first by gender, then by race/ethnicity.

The first chart on the following page summarizes high school graduation rates for dependent 18 to 24 year olds by the same family income ranges used in the previous analysis. Here the basic pattern persists: for both males and females high school graduates tend to increase with family incomes. They are lowest for both males and females at the lowest levels of family income, and highest for both males and females at the highest levels of family income.

College Continuation Rates Among 18 to 24 Year Old Dependent Family Members by Family Income 1995



Moreover, at every level of family income (except $50,000 to $75,000), the high school graduation rate for females exceeds the rate for males. Generally, the gap is widest between $10,000 and $30,000 in family income, and least among those from families with incomes either below $10,000 or above $30,000 per year.

The second chart on the following page plots the college continuation rate for those who graduated from high school. Again the basic pattern prevails: college continuation rates increase with family income for both males and females.

Once again, at every level of family income, the college continuation rate for female high school graduates exceeds the rate for males. This gap is widest between family incomes of $20,000 and $50,000 per year, and less at lower and higher family incomes.

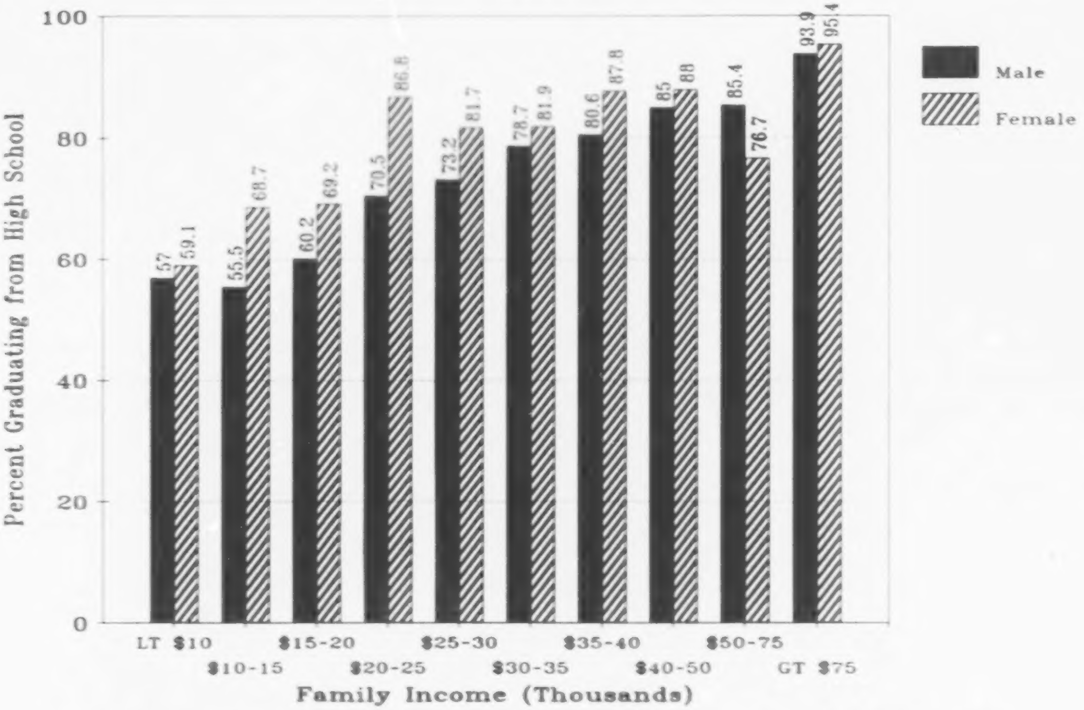
The product of high school graduation rates and college continuation rates is the chance for college. The basic pattern of increasing chance for college by family income is magnified here by earlier disparities. At every level of family income but one, females are more likely to be enrolled in college than are males.

This difference is clearly greatest in the $20,000 to $25,000 family income interval. But generally the difference is greatest between $20,000 and $50,000 of family income.

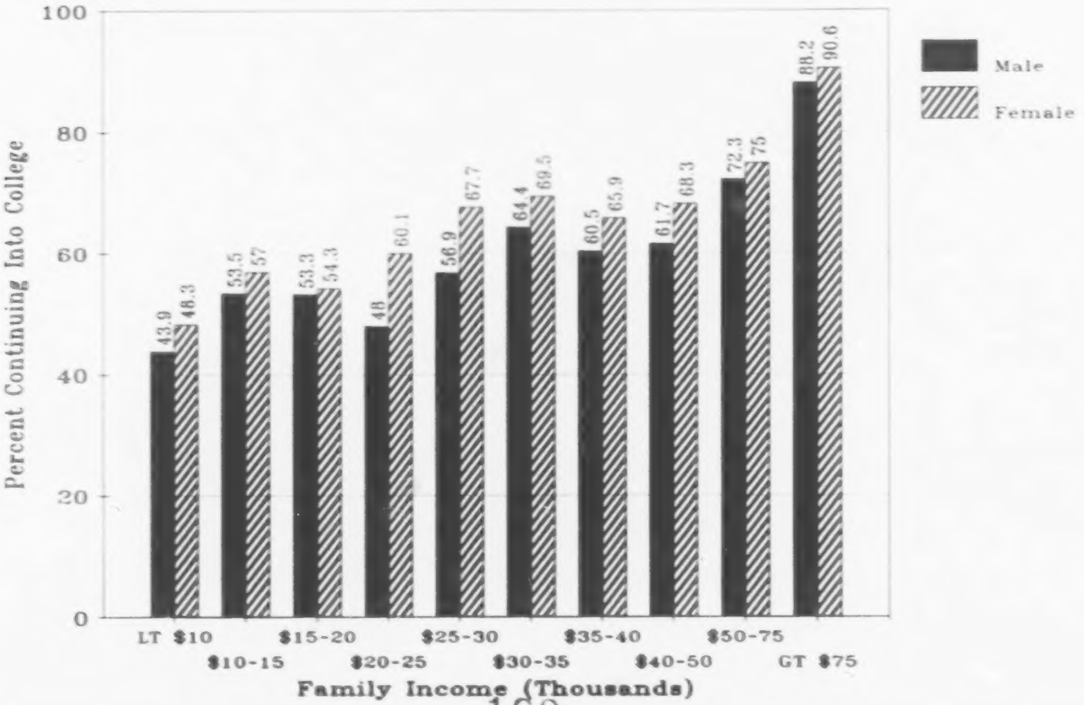
Chance for College by Race/ Ethnicity

This same analysis can be applied to racial and ethnic classifications of the

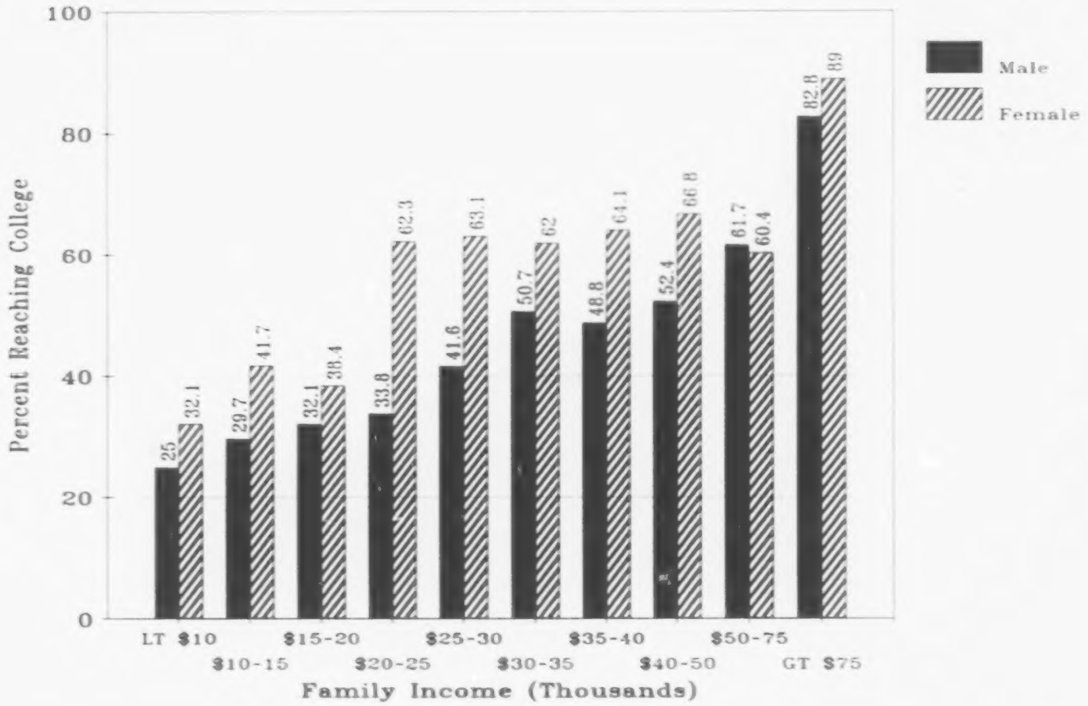
High School Graduation Rates Among 18 to 24 Year Old Dependent Family Members by Gender and Family Income 1995



College Continuation Rates Among 18 to 24 Year Old Dependent Family Members by Gender and Family Income 1995



Chance for College Among 18 to 24 Year Old
Dependent Family Members by Gender and Family Income
1995



population. Here we extend the Census Bureau's racial/ethnic classifications. The reported data are for whites, blacks and Hispanics. By deducting white and black racial data from the total, the remainder is "other race" and consists mainly of Asians.

The first chart on the following page shows high school graduation rates by family income for the four racial/ethnic categories. Generally, high school graduation rates increase with income.

However, at any income level and for each population group, interesting differences emerge.

- At most family income intervals, the high school graduation rate is highest for those of other race (mainly Asians).
- At all family income intervals but one, Hispanics graduate from high school at lower rates than any of the other three groups.
- Between the lowest and the highest levels of family income, Hispanics' increase in high school graduation rates was less than for the other three groups.
- Controlling for family income, the high school graduation rates for whites and blacks are roughly similar.

College continuation rates by family income and race/ethnicity are shown in the second chart on the following page. For each group, college continuation rates increase with income.

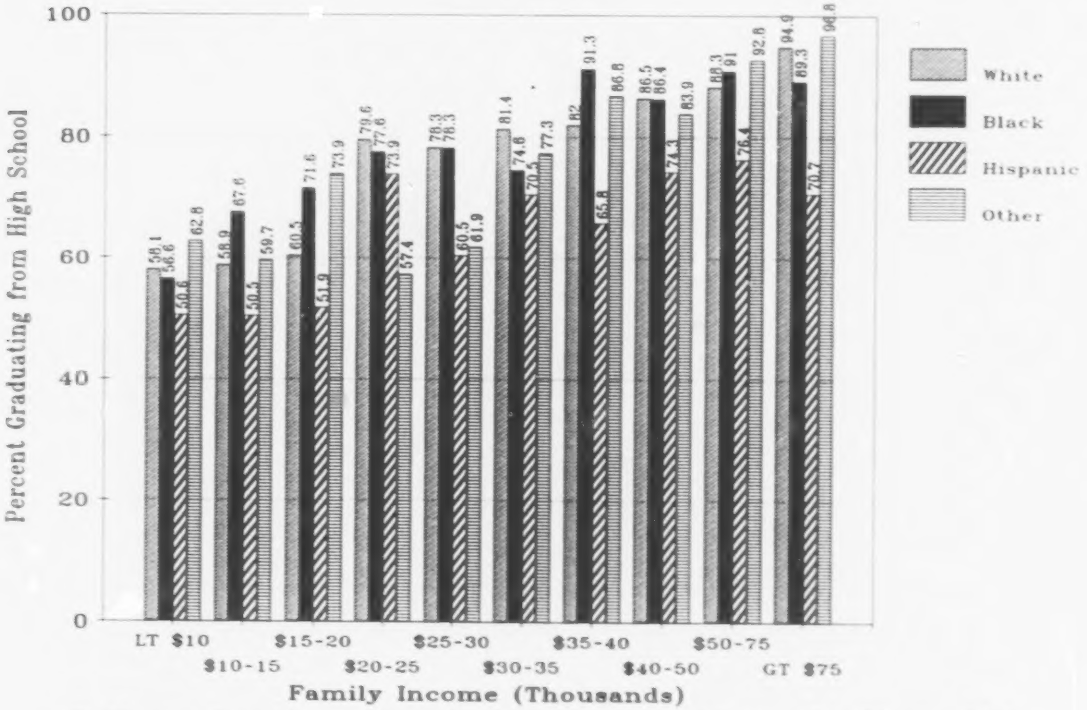
However, a few notable differences between groups occur across family income levels.

- On average, at each level of family income, those of "other race" are most likely to pursue college, while Hispanics are least likely.
- From the lowest to the highest family incomes, college continuation rates increased less among Hispanics than among any of the other three groups.

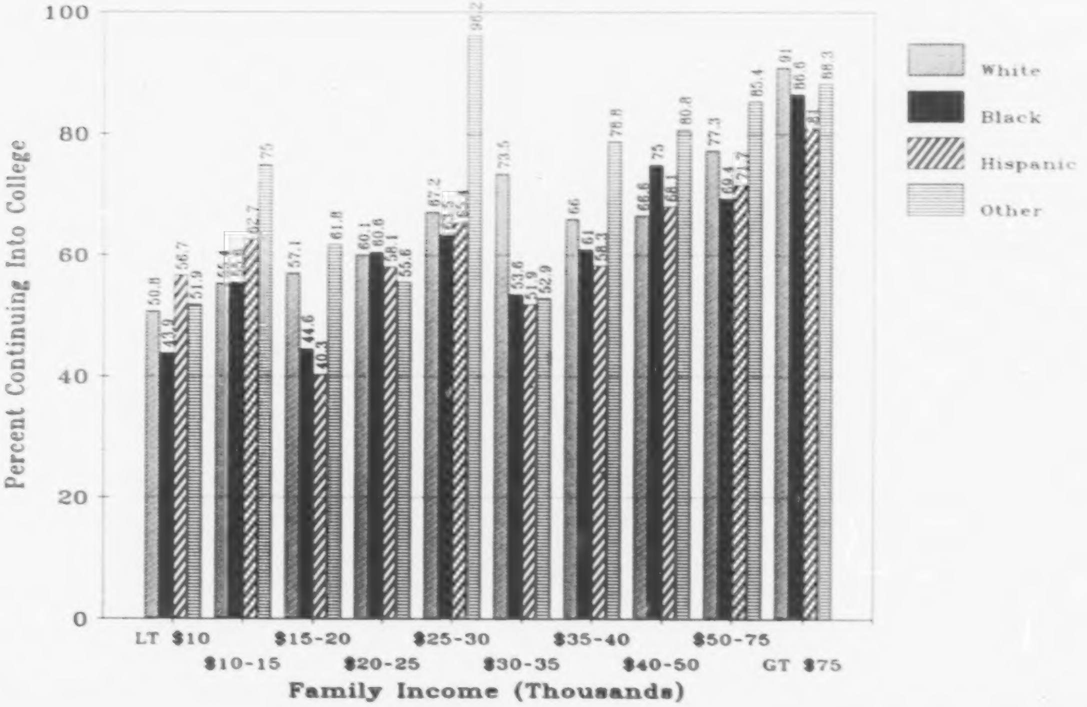
Chance for college--the product of the above two rates--compounds most of the above findings.

- Among whites, chance for college ranges from 29.5 percent for those from families with incomes below $10,000 per year, to 86.4 percent for those from family incomes above $75,000.
- Among black, chance for college ranges from 24.9 percent for those from family incomes of less than $10,000 to 77.4 percent for those from family incomes above $75,000.
- Among Hispanics, the lowest chance for college is 20.9 percent for those from families with incomes of $15,000 to $20,000 per

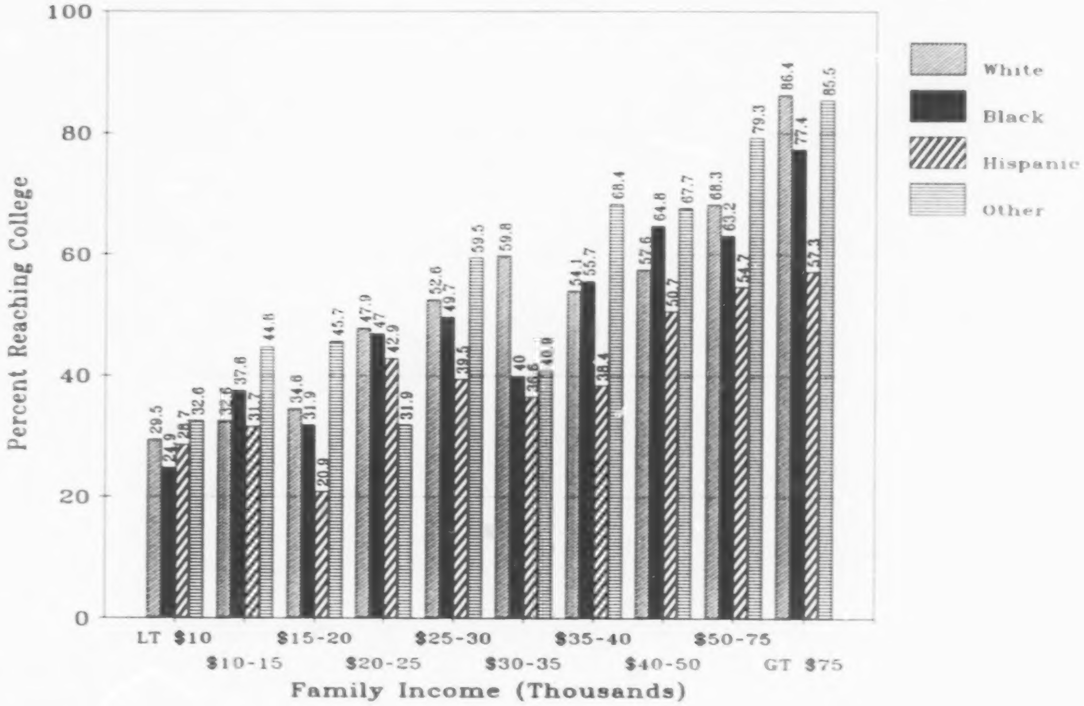
High School Graduation Rates Among 18 to 24 Year Old Dependents by Race/Ethnicity and Family Income
1995



College Continuation Rates Among 18 to 24 Year Old Dependents by Race/Ethnicity and Family Income
1995



Chance for College Among 18 to 24 Year Old Dependent Family Members by Race/Ethnicity and Family Income 1995



year. The highest chance is 57.3 percent for students from family incomes above $75.000 per year.

- Among those of other race (mainly Asians) chance for college ranged from 31.9 percent for those from family incomes of $15,000 to $25,000, to 85.5 percent for those from family incomes above $75,000.

The Missing Data on Choice and Completion

This analysis tells only a part of the story of the distribution of educational opportunity for students from different family income backgrounds. These data describe two important steps: high school graduation and college continuation. These data do *not* describe college choice, student persistence, degree attainment, nor postbaccalaureate experiences of students.

We have reported on these dimensions of educational opportunity previously, and they only serve to further exaggerate the disparities reported in this analysis.

- Students from higher levels of family income have greater choice than do students from lowest family income backgrounds.
- Freshmen from lowest family income backgrounds are increasingly concentrated in the least costly institutions, namely public two-year colleges.
- Students from highest family income backgrounds are more likely to graduate from the four-year college that they enter, and graduate sooner, than are students from low income family backgrounds.
- Students from highest family income backgrounds tend to study and enter careers in the best paying fields of study.

Viewed as a pipeline, the educational opportunity system tends to serve most successfully those born into the highest family income circumstances. The pipeline bleeds most for those from lowest family income backgrounds at every stage in the system.

What these data do say clearly and emphatically is that differences in family income backgrounds, determined largely by birth, advantage some students over others regardless of gender or race/ethnicity. When family income is controlled for, some disparities remain. These are especially pronounced for males and Hispanics. Within the larger construct of family income, they remain to be addressed. But clearly the all-encompassing disadvantage is limited family income. And as the following analysis makes clear, the way to address that is through expanded higher educational opportunity.

The more, the better . . . . . . of both

Family Income by Educational Attainment
1959 to 1996

The previous analysis examined educational opportunity by family income. This analysis examines family income by educational opportunity

Americans live most of their lives in families. And perhaps no single indicator measures family welfare quite as well as family income. Increasingly, since about 1973, family income and the living standard that family income provides for is determined by the educational attainment of the family householder.

Here we review new data recently released by the Census Bureau on family income by educational attainment. The 1996 data are added to our previously reported time-series on family income by educational attainment of the householder that begins in 1956. The new data confirm the findings from past analyses of these data:

- Family income increases with the educational attainment of the householder
- Increased family income leads to higher living standards.

These data also conclude that the income disparities between families at different levels of educational attainment that grew so rapidly between 1973 and 1993 have narrowed somewhat between 1993 and 1996.

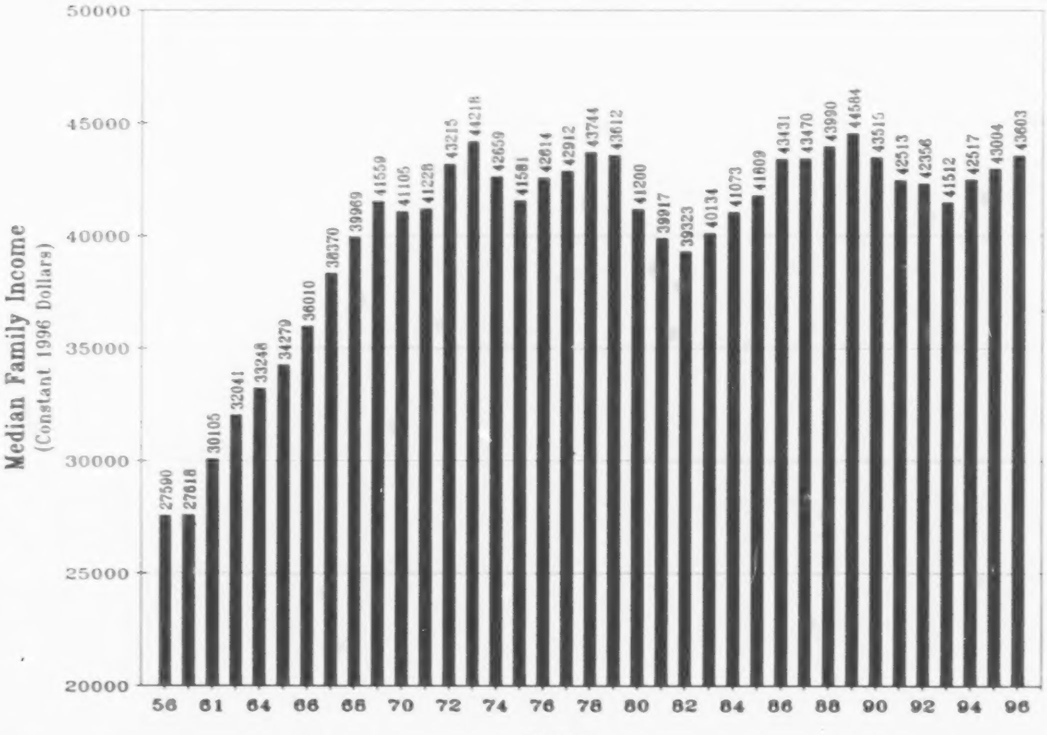
These and other important findings are gleaned from the recent Current Population Report on incomes of persons, households and families.

The Data

Each month the federal Census Bureau conducts a survey of a sample of about 50,000 American households to gather data on characteristics of the population. Data are collected and reported on jobs, income, poverty status, health insurance coverage, marital status, migration and other characteristics. These data are reported in various *Current Population Report* series on income, education and other topics.

This report is based on income data collected in the March 1997 Current Population Survey. The report has

Median Family Income for All Families
1956 to 1996



been published as:

U.S. Bureau of the Census, Current Population Reports, P60-197, *Money Income in the United States: 1996 (With Separate Data on Valuation of Noncash Benefits)*, U.S. Government Printing Office, Washington, DC, 1997.

We obtained our copy by downloading it from the Census Bureau's website, at:

http://www.census.gov/hhes/www/income.html
Note that to download, view and print this report requires Adobe Acrobat software, which is available free and whose source is linked from the Census Bureau's website.

Income as used here refers only to money income before taxes, and does not include noncash benefits such as food stamps, medicare, medicaid, public housing, or employer-provided fringe benefits. Included in income are earnings, unemployment compensation, workers' compensation, Social Security, Supplemental Security Income, public assistance, veterans' payments, survivor benefits, disability benefits, pension or retirement income, interest, dividends, rents, royalties, estates, trusts, educational assistance, alimony, child support, financial assistance from outside of the household and other income.

This analysis uses *median family income* which means that half of all families have greater incomes than the median, and half have less. The poster that accompanies this issue of OPPORTUNITY uses average (or mean) family income, which is somewhat greater than median income. We use average in the poster because we think more people who might see the poster will understand average than will understand median.

Family is defined by the Census Bureau as a group of two or more persons related by birth, marriage or adoption who live in the same housing unit. The measurement of *educational attainment* was changed in the early 1990s from years of school completed to highest degree completed. *Educational attainment of householder* refers to the education of the person in whose name the housing unit of the family is held. If the housing unit is in more than one person's name, than either can be referenced.

Median Family Income

In 1996 median family income for all families was $43,603. In constant 1996 dollars, this was up from $43,004 in 1995, $42,517 in 1994 and $$41,512 in 1993. While at a glance (the selective perspective often preferred by political leaders) this looks like steady increases have occurred in median family income, a longer term and broader view leads to almost opposite conclusions.

As the chart on page 9 shows, real median family incomes (adjusted for inflation by the Consumer Price Index) increased sharply between 1956 and 1973, from $27,590 to $44,218, or by 60 percent. Then, between 1973 and 1996, median family fluctuated up and down, but did not grow. In fact, the 1996 median family income of $43,603 is below the median incomes reported for families in 1973, 1978, 1979, 1988 and 1989. The 1996 figure is also 1.4 percent below the 1973 figure.

Clearly, overall median family income stopped growing after 1973--two years after this country stopped increasing private and social investment in higher education (expressed as a percent of Gross Domestic Product). In the years after World War II, when investments in higher education were increasing rapidly, median family incomes were also increasing rapidly. Shortly after investments in higher education stopped growing, so too did median family income. This relationship is not accidental, as we have pointed out in previous issues of OPPORTUNITY (most recently in December 1996).

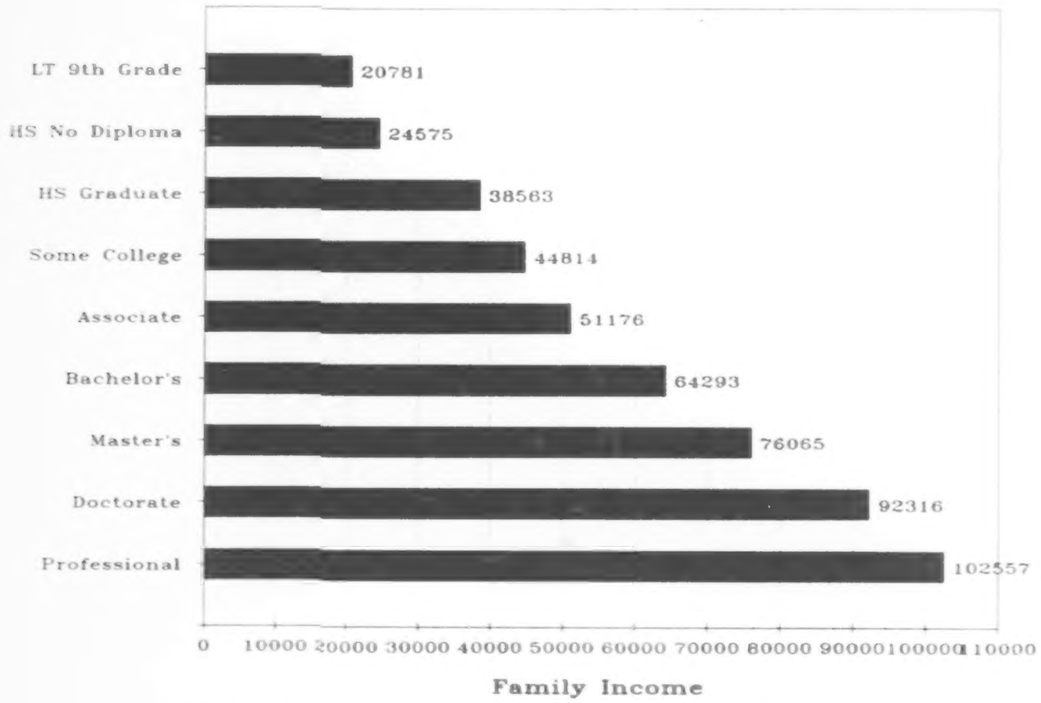
Family Income by Educational Attainment

Few family characteristics describe income and the living standards that income supports more clearly than does the educational attainment of the family head. The first chart on page 11 shows median family income by educational attainment of the householder in 1996.

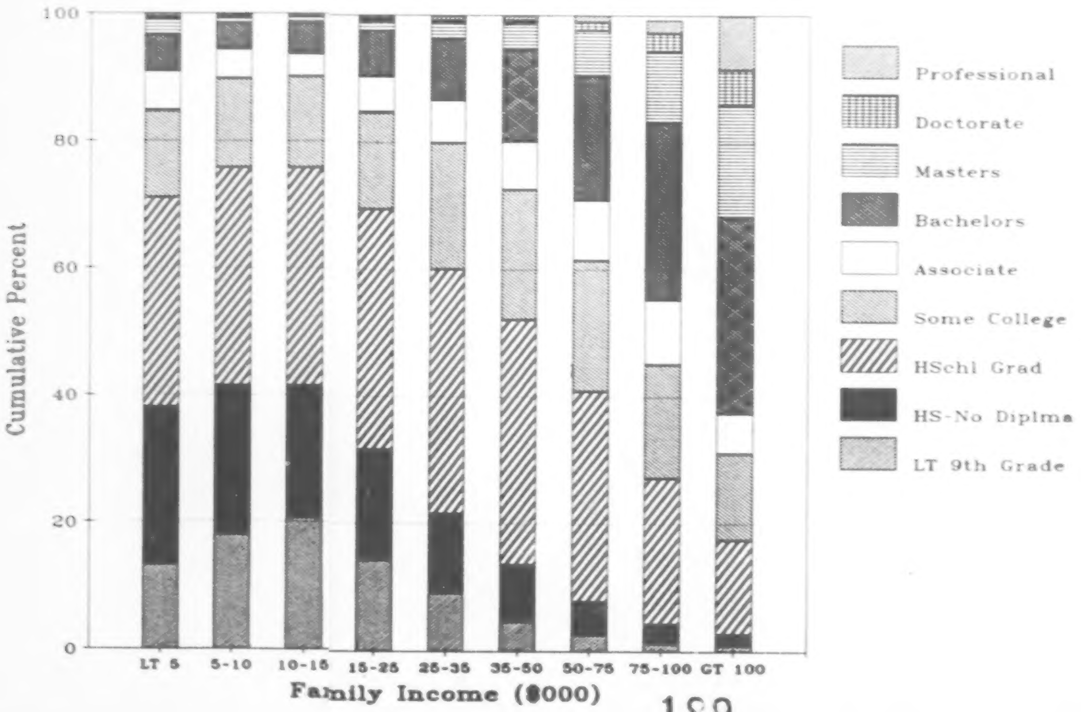
Median family income increases directly with educational attainment. For example, median family income for families headed by persons who left high school without a diploma was $24,575, compared to $38,563 for those who left high school with a diploma. If the family head had an associate degree from college, median family income was $51,176, which rose to $64,293 for families headed by a person with a bachelor's degree. Advanced degrees went on up from there.

Another way of presenting the link between income and education could follow like this. Suppose a family wanted to live at an income of $60,000 per year. This is about 38 percent above the median income for all families of $43,603. Only about 12 percent of families headed by high school dropouts earn $60,000 or more per year. By comparison, 26 percent of families headed by high school graduates earned $60,000 or more, 40 percent of families headed by a person with an associate degree, 55 percent of families headed by a person with a bachelor's degree, 66 percent of those whose head has a master's degree, 79

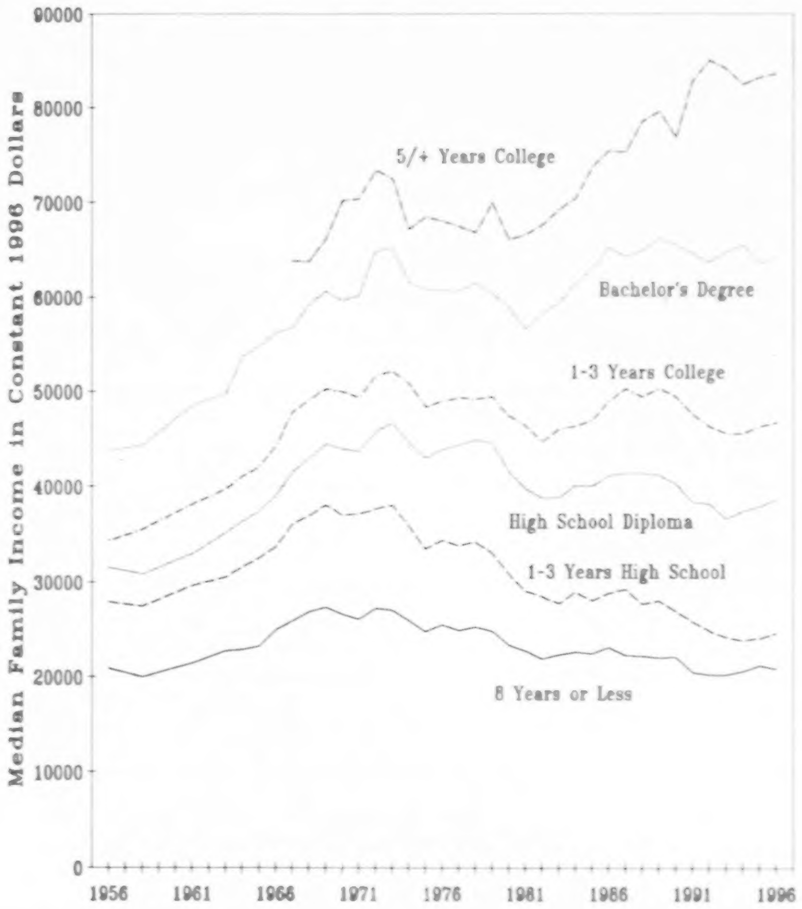
Median Family Income
by Educational Attainment of Householder
1996



Distribution of Families by Income and
by Educational Attainment of Head
1996



Median Family Income
by Educational Attainment of Householder
1956 to 1996



percent of families headed by a person holding a PhD, and 74 percent of families headed by a person with a professional degree. To increase one's odds of living in a family making $60,000 or more per year, the surest path would appear to be through higher education, and the more the better.

Changes in Family Income by Education

While median family income for all families has remained basically stagnant between 1973 and 1996, a very different picture emerges when parental educational attainment is controlled for. While the total is stable, in fact extraordinary *redistribution* of family income has occurred between 1973 and 1996. And the basis on which this redistribution has occurred has been educational attainment.

As shown in the above chart, median family income increased at all levels of educational attainment between 1956 and about 1973. But after 1973, some incomes went down (way down!), some stayed about even, and some went up. For example, median family income (corrected for the eroding effects on purchasing power of inflation) for high school graduates in 1973 was $46,604, and by 1996 had dropped to $38,563. This was a decline--in real terms--of $8041, or 17.3 percent.

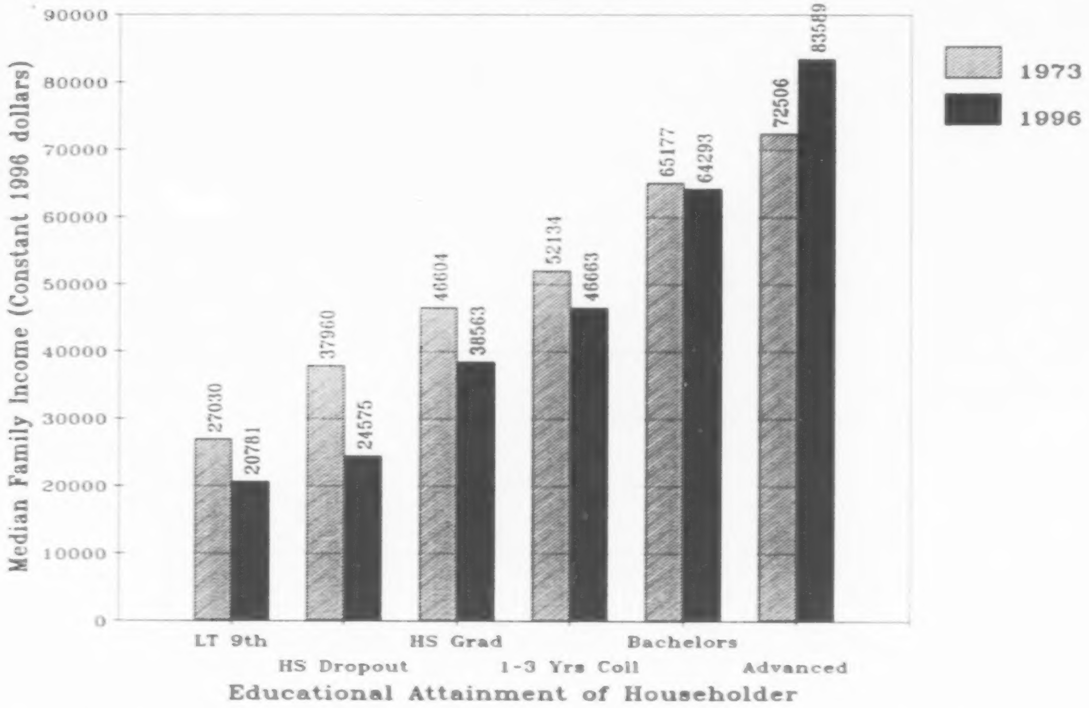
For families headed by persons with bachelor's degrees, median family incomes declined from $65,177 in 1973 to $64,293 in 1996. This was a decline of 1.4 percent, or $884. For families headed by persons with advanced degrees--masters, doctorate or professional--median family incomes increased from $72,506 in 1973 to $83,589 in 1996. This was an increase of $11,083, or 15.3 percent.

The picture that emerges from these data is one of substantial family income *redistribution* within a stable overall median. Those families headed by persons with least formal education, particularly those with 1 to 3 years of high school but no diploma, experienced the largest reductions in real incomes and the living standards those incomes support. At the other end of the education spectrum, families headed by persons with post-baccalaureate educations experienced substantial gains in real (inflation adjusted) incomes and concomitant living standards that incomes provide.

Discretionary Family Income

Another way of measuring family welfare through income data is to examine what we will call *discretionary income*. This income is the difference between median family income and average poverty thresholds for a family of four. This assumes that basic survival needs of the family are met first, and what is left over is available to the family to make choices about qualitative and quantitative improvements in the family's living standard.

Median Family Income by
Educational Attainment of Householder
1973 and 1996



Obviously, families with more income will have more discretionary income. What is instructive, however, is how discretionary family income has changed over time for families at different levels of educational attainment. For example, discretionary income as a proportion of median family income for families headed by high school graduates rose from 52 percent in 1961 to a peak of 66 percent in 1973 and has since gradually eroded to 58 percent by 1996. Among families headed by persons with a bachelor's degree, discretionary income was 67 percent of median income in 1961, rose to a peak of 75 percent in 1973 and has hovered at close to this level each year through 1996. Only among families headed by persons with post-baccalaureate degrees have grown steadily over time, from 77 percent in 1970 to 81 percent by 1996.

The historical poverty thresholds used in this analysis can be found on the Census Bureau's website at:

http://www.census.gov/hhes/poverty/histpov/hstpov1.html

Summary and Conclusions

The Census Bureau's data on family income by educational attainment provide a vivid, and in some cases brutal, description of the relationship

Discretionary Income as a Proportion of Family Income
by Educational Attainment of Head of Household

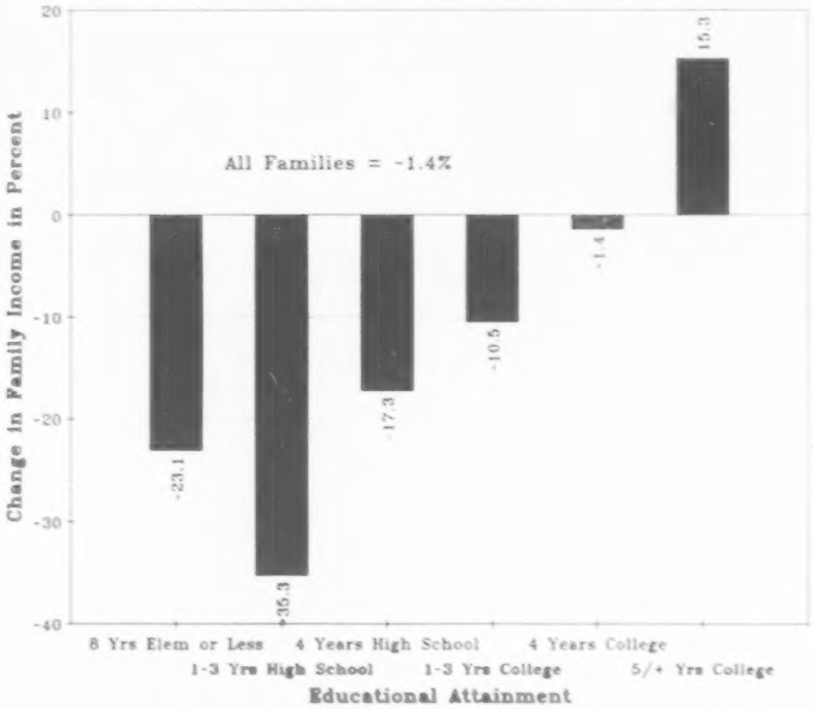
	1961	1970	1975	1980	1985	1990	1993	1996
8 Years or Less	25%	40%	35%	31%	29%	27%	21%	23%
1-3 Years HS	46%	57%	52%	48%	43%	40%	34%	35%
HS Graduate	52%	64%	63%	62%	61%	60%	56%	58%
1-3 Years College	58%	68%	67%	66%	66%	68%	65%	66%
4 Years College	67%	73%	74%	73%	75%	76%	75%	75%
5/+ Years College	DNA	77%	77%	76%	78%	79%	81%	81%
All Families	47%	61%	61%	61%	62%	63%	61%	63%

between educational attainment and family living standards. Very simply: more is better. And since about 1973, more has become essential.

The educational requirements of the labor force have been increasing since 1973. Those who pursued education after high school have fared far better than have others who went directly to work without the education that makes them more productive workers. Being honest and hard working is no longer sufficient--now one must add postsecondary education to the basic requirements for good jobs, good wages and higher living standards.

As we have studied these data, and the labor market data reported in the August issue of OPPORTUNITY, we have been struck by two findings that do not blend well. First, there have been very large gains in the educational attainment of the labor force since 1970. The proportion of the civilian labor force ages 25 to 64 years with less than a high school education declined from 36 percent in 1970 to 11 percent by 1996. The proportion of the labor force with a high school education hovered at close to 40 percent between 1970 and the early 1990s, and has since dropped to about 33 percent. At the same time, the proportion of the labor force with any college has increased from 26 percent in 1970 to 55 percent by 1996.

Despite these huge gains in education, it has not been enough. Quite simply: the labor market remains oversupplied with under-skilled workers, and undersupplied with workers with advanced levels of higher education. These are conventional interpretations of both the income redistribution portrayed in the charts in this analysis, as well as the unemployment rate data shown in OPPORTUNITY in August.



Change in Median Family Income
by Educational Attainment of Householder
Between 1973 and 1996

These data reflect imbalances between demand and supply. So, as great as have been the gains in the educational attainment of the labor force, that labor force is still under-educated for the needs of the economy.

Since 1979 the reductions in social investments in higher education have had the effect of rationing higher educational opportunity and reducing the supply of college-trained workers for the labor force. The rationing device has been price: as the costs of higher education have been shifted from taxpayers to students, the effects of price have had unequal effects for students from different family income backgrounds. Those from the most affluent family income backgrounds are least affected by the escalating prices of higher education. And their enrollment patterns reflect the labor market signals: high school graduation rates, college continuation rates and college completion rates are all up.

The same cannot be said for those born into and raised in less affluent family income backgrounds. In fact the farther down the income scale one goes, the greater the difficulties students experience in trying to secure their futures through higher education. Indeed, the rationing of higher educational opportunity since 1979 has had the effect of exacerbating the income inequality problem in the U.S.

Historically, Americans have viewed educational opportunity as the means to private and social socio-economic advancement. The retreat from that view in the 1980s and 1990s produces the kind of consequences for private and social welfare described in these charts on family income and the living standards they reflect. Just as higher educational opportunity can be a tool to advance our nation, so too can its neglect become a tool to divide us as has been the case in the 1980s and 1990s. Its bad social policy, and we are made the poorer for pursuing it.

Is this what world leadership means?

American Infatuation with Incarceration

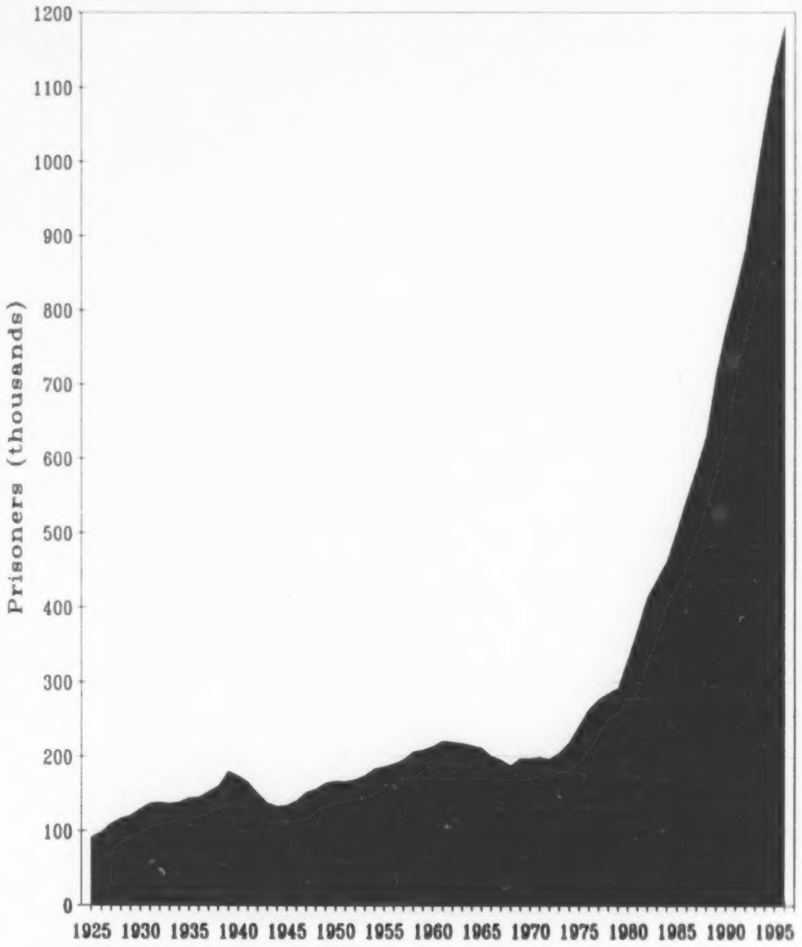
Among a number of serious blemishes on the reputation of the United States as a land of opportunity is its incarceration rate:

- The United States follows only Russia among 59 countries on which data are available in the rate at which it puts its citizens behind bars.
- Between 1985 and 1995, the United States led the world in the rate of increase in its incarceration rate.

As most crime rates drop, more and more Americans are locked up. Perhaps the crime rates drop because more antisocial men are put where they cannot do their unsanctioned acts against others and their property--although there is some doubt about this interpretation.

But another analysis of these data suggests that growing income inequality in the United States is a major culprit. The growth in drug-related criminal offenses--the only area of criminal activity where rates are increasing--suggests that males without education and skills to earn a living in the legitimate economy have turned to drug sales on the streets to live.

Prisoners in State and Federal Prisons in the Uniteed States
1925 to 1996



We update again our previous analyses of the data on incarceration for two reasons:

- First, corrections have been and continue to be a major competitor with higher education for limited state tax fund appropriations. And higher education has lost out badly to corrections in this competition for several decades. States have shifted tax resources from higher education to corrections, to build and fill prisons.
- Second, in light of the strong and growing relationship between educational attainment and income, we take the growth in correctional populations to be a consequence of the failure of society through its governments to educate all of its citizens for productive, responsible, self-supporting social roles.

Adam Smith's invisible hand becomes a fist, punishing us with wasted lives, wasted social resources and diminished living standards, when we ignore the most basic and obvious of our social responsibilities to prepare our citizens for their adult roles.

The Data

The data contained in this analysis comes mainly from two sources. The data on incarceration in the United States are collected and reported by the Bureau of Justice Statistics. Much of this data is available for downloading directly from their website at:

BEST COPY AVAILABLE

http://www.ojp.usdoj.gov/bjs/welcome.html

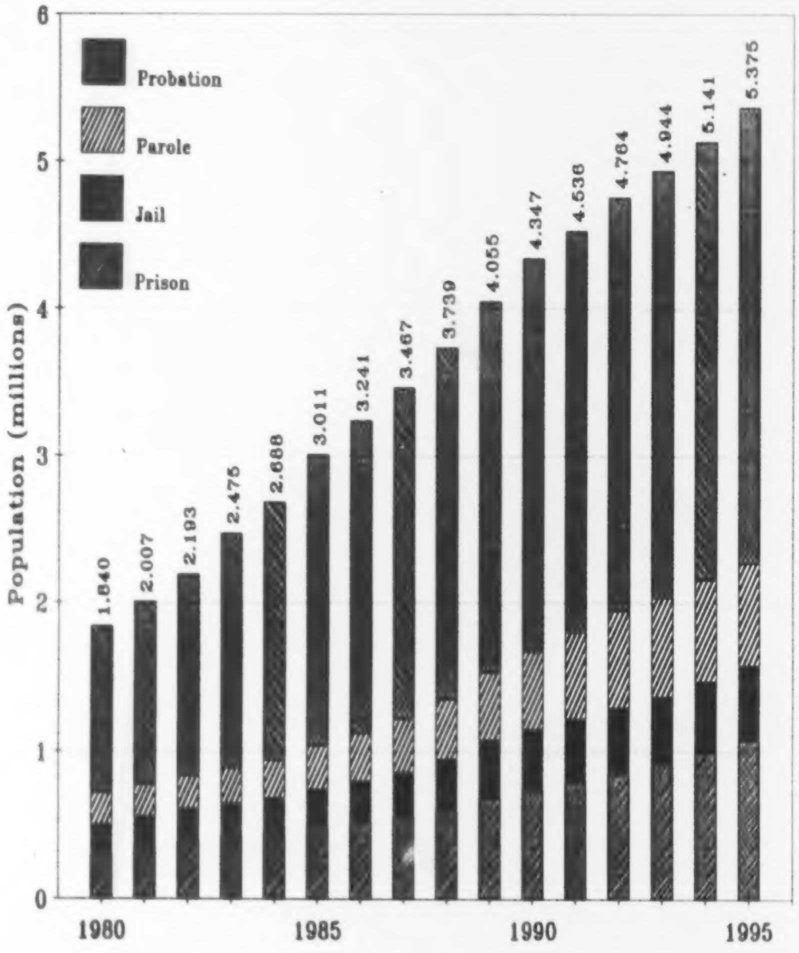
As with most large report/file downloads from the federal government, free Adobe Acrobat is required to download, view and print the larger of these reports. The Acrobat software is accessible for downloading and installation from the website through a link.

The data on international incarceration rates is collected and reported by The Sentencing Project, a Washington DC-based nonprofit organization. The Sentencing Project is a national non-profit organization that promotes sentencing reforms and conducts research on criminal justice issues.

We have focused here mainly on the international comparisons contained in the report, although significant and thoughtful additional information is contained in the report. Their most recent report is available for $8.00 at (202) 628-0871.

Mauer, Mark. (June 1997). *Americans Behind Bars: U.S. and International Use of Incarceration, 1995.* Washington, DC: The Sentencing Project.

Correctional Populations in the United States
1980 to 1995



Correctional Populations in the United States

In 1995 about 5.4 million people were under one of four forms of correctional supervision in the United States. As described by the BJS, these forms are:

Probation: court ordered community supervision of convicted offenders by a probation agency. In many instances, the supervision requires adherence to specific rules of conduct while in the community. (3.1 million)

Prison: confinement in a state or federal correctional facility to serve a sentence of more than one year, although in some jurisdictions the length of sentence which results in prison confinement is longer. (1.1 million)

Jail: confinement in a local jail while pending trial, awaiting sentencing, serving a sentence that is usually less than one year, or awaiting transfer to other facilities after conviction. (.5 million)

Parole: community supervision after a period of incarceration. These data include only adults who are on active or inactive parole supervision or other form of conditional release, including mandatory release, following a term of incarceration. (.7 million)

In 1995, the distribution of the population under correctional supervision was broken into these four categories as follows: probation: 57.6 percent; jail: 9.3 percent; prison: 20.1 percent; and parole: 13.0 percent.

Between 1980 and 1995, the number

of people under correctional supervision increased from 1.8 million to 5.4 million, and average annual increase of 235,608 people per year.

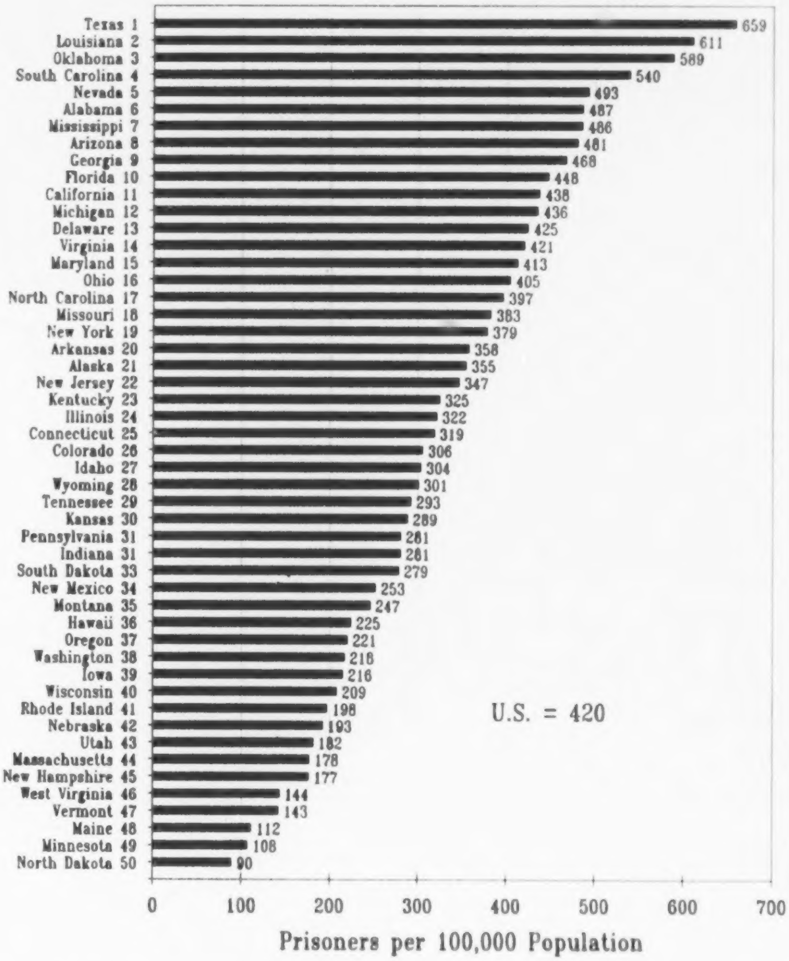
Prison Populations in the U.S.

Since the mid-1970s, the United States has been putting ever larger numbers of its citizens into state and federal prisons. These data are shown in the chart on page 15.

- Between 1925 and 1973, the prison population of the U.S. increased from 92,000 to 204,000--an average annual increase of 2,333 prisoners per year.
- Between 1973 and 1996, the prison population grew to 1,182,000--an average annual increase of 48,900 prisoners per year or nearly 21 times faster pace.

In 1995, one criminal justice instructor at a small college in Iowa conducted a tongue-in-cheek study of trends in incarceration. While the prison population grew slowly for many decades, the acceleration beginning in the mid 1970s has a geometric progression to it. The U.S. incarceration rate had risen from 94.6 prisoners per 100,000 population in 1972, to 170 by 1982 and 330 by 1992. At a geometric growth rate, every American would be in prison by the year 2096, and every black person would be in jail by 2066. He used this example to suggest there were real limits to the use of incarceration, and that creating hope for young males that had none might produce lower incarceration rates.

Sentenced Prisoner Incarceration Rate by State 1996



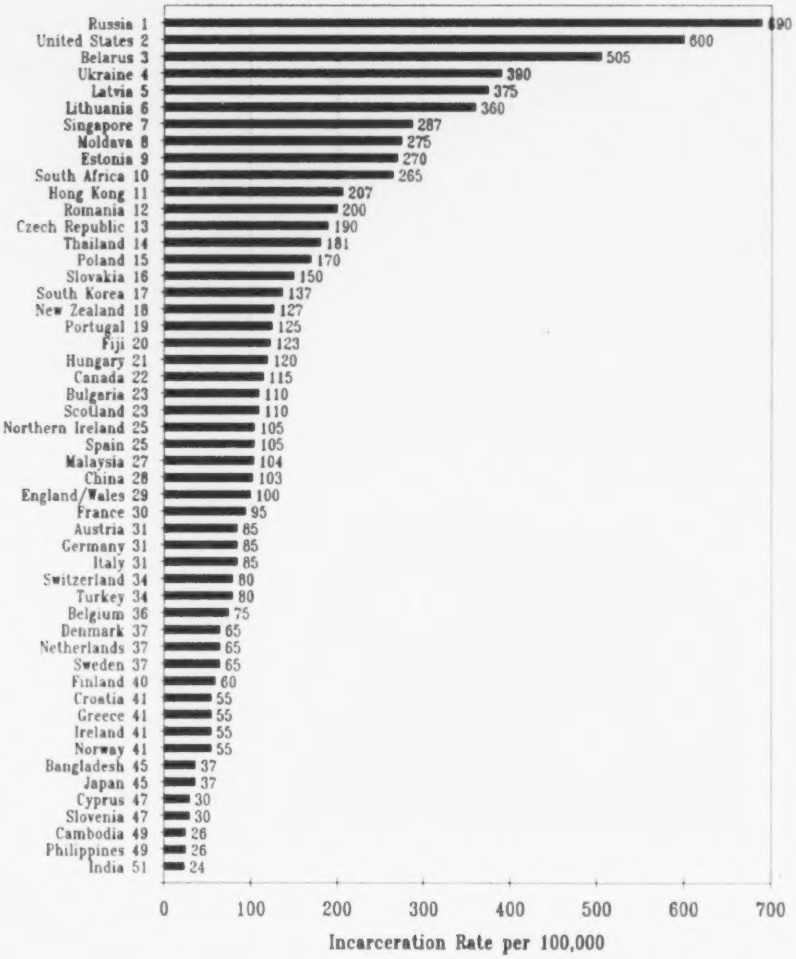
As of June 30, 1996, the federal and state prison incarceration rate was 420 per 100,000 population--up from 322 in 1993. By state, the incarceration rate ranged from 90 prisoners per 100,000 population in **North Dakota**, to 659 in **Texas**. Generally, prison incarceration rates are highest in the South (487), somewhat lower in the West (375), and lowest in the Midwest (318) and Northeast (306). Between 1995 and 1996, incarceration rates increased the most in **Nebraska** (+16.0%), **Montana** (+15.2%), **North Carolina** (+14.4%), **Oregon** (+14.1%) and **Wisconsin** (+13.9%). They increased the least in **New Hampshire** (-0.7%), **Connecticut** (-0.2%), **New York** (+0.3%), **Maine** (+0.6%) and **Michigan** (+1.2%).

Prisoner Characteristics

The characteristics of the prison population are fairly well known.

- Prisoners are about 94 percent male, although the proportion of prisoners that are females has been growing for several years, and the incarceration rate for males (809 prisoners per 100,000 population) is about 16 times that of females (50 per 100,000).
- They are disproportionately minority males,
- Between 65 and 75 percent are between the ages of 18 and 35, and
- Very few have any postsecondary education.

A recent study by the Bureau of Justice Statistics has calculated lifetime



International Incarceration Rates
1995

chances of going to a state or federal prison as follows:

Lifetime Chances of Going to State or Federal Prison

Group	Lifetime Chance
Total	5.1%
Males	9.0%
White males	2.5%
Black males	28.5%
Hispanic males	16.0%
Females	1.1%
White females	0.5%
Black females	3.6%
Hispanic females	1.5%

International Incarceration Rates

For international purposes, the incarceration rate is the number of people locked up in jail or prison per 100,000. In 1995 in the United States the incarceration rate stood at 600. That is to say, for every 100,000 Americans, 600 were in jail or prison.

In 1995 the incarceration rate in the United States ranked second highest among 51 countries where data were available in comparable form. The United States ranked second only to Russia, which had locked up 690 people for every 100,000 population. Of the nine countries with the highest incarceration rates, all but two were former part of the Soviet Union. The only countries ranked in the top nine who were not formerly within the Soviet Union were the United States and the notably repressive Singapore. The incarceration rate in the United States was six to ten times greater than the rate for western European countries.

Over the ten year period between 1985 and 1995, changes in incarceration rates could be calculated for 27 countries. In eleven countries incarceration rates increased, while they held constant in three countries and declined in 13 others. Here the United States was the clear winner (or loser, depending on your point of view): the percent change in the incarceration rate was up 92 percent and the U.S. lead the world in the rate of growth in locking up its own people.

Incarceration as Social Policy

Crime rates occur in context. High incarceration rates may be the result of unusual incidence of violence or other serious crime, or higher rates and/or longer periods of incarceration that result from more punitive criminal justice policies, or may be a reflection of social conditions (growing income inequality, racial tensions) that further reflect the failure of pro-active social policy interventions, or the wealth of a country available to finance expensive incarceration decisions by law makers.

However, incarceration is a social policy choice almost unique to the United States. Across many nations, almost none have chosen to lock up their own citizens as aggressively as has the United States, particularly since the mid-1970s. The choices that constitute this policy include locking up more offenders for less serious has the United States, particularly since the mid-1970s. The choices that constitute this policy include locking up more offenders for less serious crimes and locking them up for longer periods of time (e.g. three-strikes-and-your-out!). It behooves us to reflect on the choices we have made to see whether alternative choices could have produced greater social benefit.

Except for far right politicians, few people seem to be comfortable with the *extremely* punitive corrections policy practiced in the United States. The academic literature on criminal justice rarely recommends massive incarceration as a cure for the anti-social behavior of individuals. In any society some people will do such awful things to other people that their conduct is uniformly judged to be in clear violation of socially acceptable norms, and these people must be locked up by anyone's standards.

But for most people, crime starts in poverty and hopelessness. In recent international comparisons (Luxembourg income studies) of how the United States cares for its poor youth and their families compared to other countries, the United States had the worst record of any country in the industrial world. And recent welfare reform is likely to make matters worse. Moreover, where problems were being addressed in other countries, in the United States they were being ignored and the plight of youth here was deteriorating.

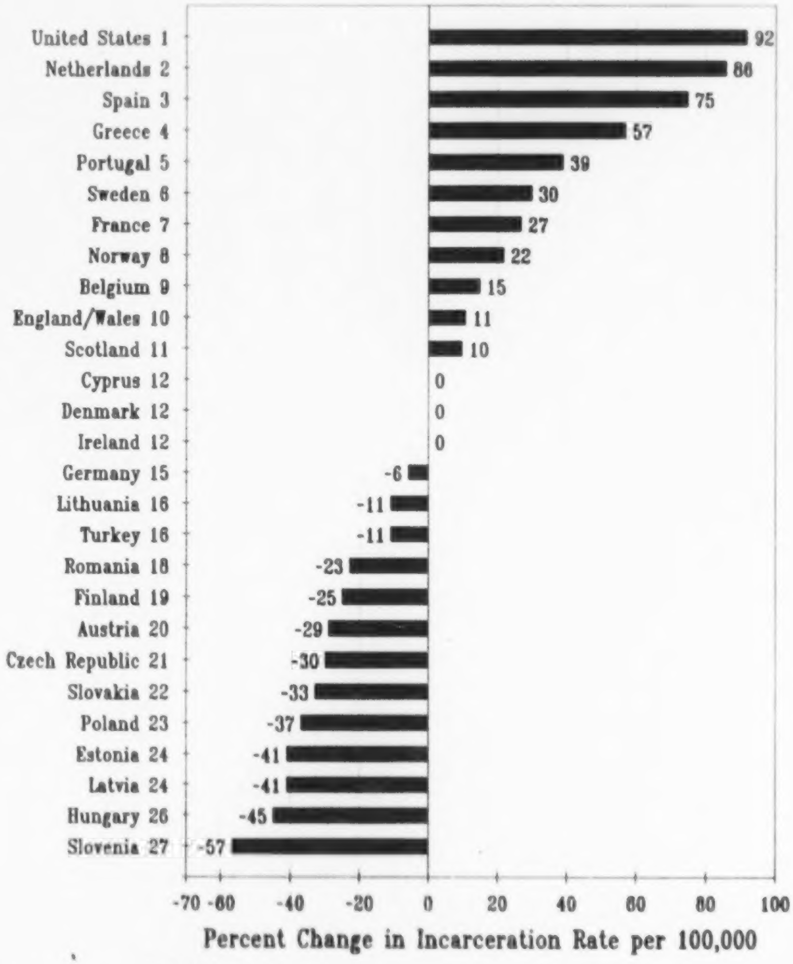
Social policy in the United States seems to be driven by wishful thinking: *if only poor people would stop behaving like poor people and start behaving like middle-class folks (us), they wouldn't be poor anymore.* For about 18 years now we have pursued this course. It does not appear to be working.

Our view is that real opportunity for quality postsecondary education and training must be at the core of an effective social policy designed to address the causes of criminal behavior.

The evidence presented in this issue of OPPORTUNITY on education by income, and income by education, shows that postsecondary education enhances private welfare. And to an extraordinary degree, access to that postsecondary education is determined by the family income background of the family into which a child is born.

The ferocity of the economic tiger driving our lives today waits for no one. Those who get the education and training they need to become productive workers will have access to the best paying jobs in the labor force. Those who lack these skills will get what is left over, increasingly competing with workers in the rest of the world willing to work for far less than unskilled American workers have enjoyed in the past. For those in this labor market due to skill deficiencies, life inevitably becomes more desperate and hopeless. And that is why we have a burgeoning correctional population.

Change in International Incarceration Rates
1985 to 1995



Posters

Posters, we are told, are an inexpensive way to communicate important ideas to many people. We began publishing posters several years ago, initially on family income by educational attainment of the householder. The third edition of that poster is included with this issue. Response from our subscribers (and others who have seen them) indicates to us that they are communicating important messages to the right people.

Our primary intent with the posters is to turn on students in secondary education to the advantages of postsecondary education and training. We want students who might never have thought about college to start asking questions. We want students who may not appreciate the importance of their college prep coursework in high school to take that coursework more seriously. We are less interested in the student who will go to college regardless of the poster, and we are more interested in reaching the student who does not know what college is or does not fully appreciate how important the collegiate experience is to his or her future welfare.

We know that the posters have been used in other ways, by trustees, legislators, institutional funding sources, community business leaders and other groups. We appreciate that, but we appreciate even more getting students in secondary education turned on to college. There are about 30,000 secondary schools in the United States, and our posters probably have not yet reached more than a few hundred of them. We would like to see our subscribers order posters for secondary schools in the regions that they serve.

Currently there are six posters in 17 by 22 inch size:

- Family income by educational attainment of householder, 1996
- Annual income for males by educational attainment, 1995
- Annual income for females by educational attainment, 1995
- Unemployment rate by educational attainment, 1996
- Voting rates in the 1994 congressional elections by educational attainment
- Median annual earnings of male bachelor degree graduates age 35 to 44 by major field of study, 1993

The family income poster is also available in 8.5 by 11 inch size.

We will publish both updates to existing posters and new posters over the next year.

These posters are available at $2 each. Custom printing of the distributing source on posters is available at an additional charge. Contact OPPORTUNITY at the subscription e-mail address, postal address, phone or fax for more information or to place orders.

OPPORTUNITY Subscription Order Form

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Postsecondary Education OPPORTUNITY

The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 65 **Oskaloosa, Iowa** **November 1997**

Still Headed for Zero . . . . . . by 2036

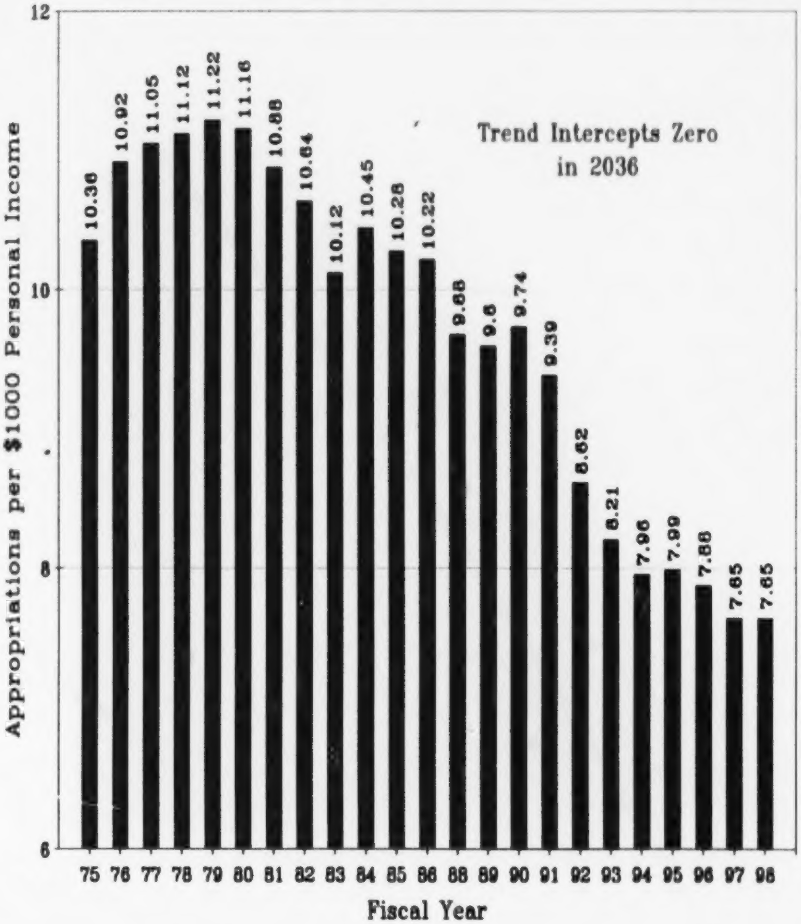
Decline in State Tax Fund Appropriations for Higher Education Paused in FY1998

Total state tax fund appropriations for higher education, controlling for resources available to states to finance higher education, stopped their long downward slide in state budgeting for FY1998. The pause deferred to 2036 the year when state funding for higher education will reach zero if the funding trend since FY1979 continues. That is the good news.

The bad news is that none of the ground lost since FY1979 was restored--only the decline was stopped. More bad news: in a majority of the states, state tax fund appropriations for higher education per $1000 of personal income continued their slide in FY1998 state budget actions. Moreover, 21 states reported the lowest level of state tax fund appropriations for higher education per $1000 of state personal income since these data were first compiled for FY1975.

In an increasingly knowledge-driven economy, the paradox between the growing importance of higher education to state economic prosperity and declining state financial investment in higher education is alarming. On the one hand, economic welfare--for individuals, families, communities, states and the nation--is increasingly determined by the higher educational attainment of the adult, working population. This pattern has been in place since about 1973.

Appropriations of State Tax Funds for Operating Expenses of Higher Education per $1000 of Personal Income FY1975 to FY1998



On the other hand, states have been sharply reducing their social investments in their citizens through higher education since FY1979. This decline is long-term and widespread. Every one of the 50 states is appropriating a smaller share of its available resources to higher education today than it did 19 years earlier. Compared to FY1990 support levels, the FY1998 appropriations are $13.5 billion less. Compared to FY1979 support levels, the FY1998 appropriations are $23.1 billion less.

Here we update and extend our analysis of data collected and reported by Professor Edward Hines and his colleagues at Illinois State University. We extend the reported data by adding state personal income, extending our previously published time-series analysis of these data, and adding our interpretation of the findings.

In the end we find this most striking of paradoxes: the growing importance of higher education to state economic welfare met by declining state investment in higher education.

The Data

The primary data used in the following analyses is state tax fund appropriations for higher education, including universities, colleges, community colleges and state higher education agencies. State reports are compiled under the following criteria:

- Appropriations, not actual expenditures.
- Sums for annual operating expenses only.
- Included are sums for universities, state aid to local community colleges and for vocation-technical 2-year colleges or institutes that are operated primarily for high school graduates and adult students.
- Included are sums for statewide coordinating or governing boards for their own expenses for the reallocation to other institutions.
- Included are sums for state student aid programs.
- Included are sums destined for higher education but appropriated to other state agencies.
- Included are appropriations directed to private higher education institutions.
- Excluded are appropriations for capital outlays and debt service.
- Excluded are sums derived from federal sources, student fees, auxiliary enterprises and other non-tax sources.

The results of this survey are available from a variety of sources, including the *Grapevine* website at:

http://coe.ilstu.edu/grapevine

These data are published each fall in the *Chronicle of Higher Education*, and later in March under the title *State Appropriations for Higher Education* by the State Higher Education Executive Officers, Denver, Colorado.

The above data are examined from the perspective of state personal income. Generally state appropriations are reported here per $1000 of personal income. These are the resources available within each state to finance the operations of higher education.

The most recent data on state personal income is for 1996, and is available at the federal Bureau of Economic Analysis' website at:

http://www.bea.doc.gov/bea/dr/spitbl-d.htm

There are many cautions appropriate to the interpretation of these data. For our purposes here the most important is that comparisons *within* states over time are far more appropriate than are comparisons *between* states at any one point in time. The reason for this is that private higher education, which is only incidentally dependent on state tax fund appropriations, plays roles ranging from dominant to trivial in the higher education available across the 50 states.

State Tax Fund Appropriations

For FY1998 states appropriated $49,402,401,000 in state tax funds for higher education. This was up from $46.6 billion appropriated for FY1997, $44.3 billion appropriated for FY1996 and $34.4 billion appropriated for FY1988.

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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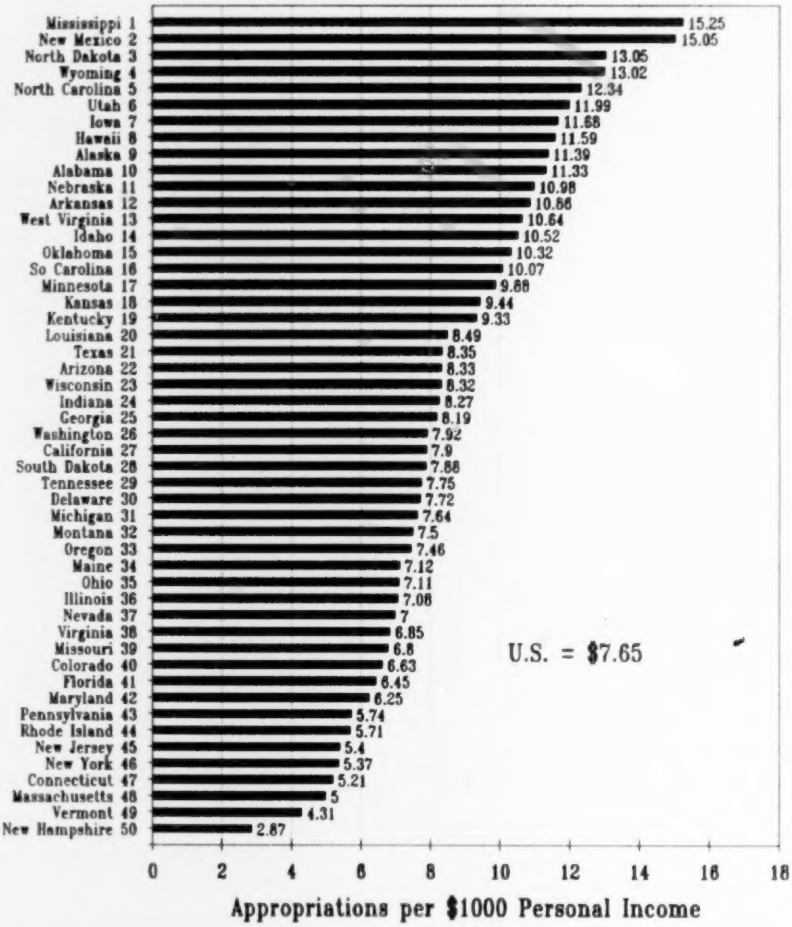
Appropriations of State Tax Funds for Operating Expenses of Higher Education per $1000 of Personal Income FY1998



As sums of money, these appropriations are very large--indeed far larger than sums provided by the federal government. But these sums, or their apparent growth over time, mean little unless adjusted for the effects of inflation, the purposes to which they are put, the social needs to be addressed as they are spent, or the resources available to states from which these appropriations are made. The following analyses address these issues to add social policy meaning to the dollar amounts states appropriate from their tax resources for higher education.

The chart on this page shows state tax fund appropriations for higher education for FY1998 per $1000 of 1996 state personal income. For all 50 states the figure is $7.65. The range is from $2.87 in New Hampshire to $15.25 in Mississippi.

State appropriations for FY1997 were also $7.65 per $1000 of personal income for all states. This chart is shown on page 1 of this issue of OPPORTUNITY. Here the overall pattern is one of growth in state tax fund appropriation between FY1975 and FY1979, from $10.33 to the peak of $11.22. Since FY1979, state appropriations have declined to $7.65, or by 31.8 percent.

This decline occurred mainly in two large drops, one between FY1980 and FY1983, and the other between FY1990 and FY1994. Both the early 1980s and the early 1990s were periods of economic recession, with state revenues affected negatively and demands for state revenues impacted positively. In this competition for state dollars, higher education suffered badly. Moreover, when the business cycle entered its expansion phase, state funding for higher was not restored. By the later 1980s and again in the mid 1990s, state appropriations resumed their decline, albeit more gradually and less violently than had occurred during the recession phase of the business cycle. Even in the best of economic times, governors and legislators in the states have continued to assign a diminishing priority to funding higher education.

State Analyses

The national picture described to this point is simply an amalgamation of decisions made in each of the 50 states by state budget makers. Not all budget makers make the same decisions, and so it is worthwhile extending this analysis to a state-by-state basis, particularly over time.

The figure on page 5 shows the percentage change in state tax appropriations between FY1997 and FY1998. Controlling for personal income, 20 states increased funding for higher education, one made no change, and 29 states reduced funding for higher education. The largest gainer was **Nevada** at +11.4 percent (from $6.28 to $7.00). The largest losers were **Tennessee** and **New Jersey** which reduced their higher education funding by 8.3 percent.

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Appropriations of State Tax Funds for Operating Expenses of Higher Education per $1000 of Personal Income by Fiscal Year

State	1975	1977	1979	1980	1982	1984	1985	1986	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Change: FY1979 to FY1998		Approps Reach Zero in
																				Dollars	Percent	
Alabama	$11.54	$16.03	$18.04	$16.02	$14.31	$11.67	$13.73	$15.69	$12.42	$15.65	$14.73	$15.45	$13.02	$12.98	$13.08	$14.19	$12.54	$11.80	$11.33	$-6.71	-37.2%	2065
Alaska	18.42	19.60	16.64	16.42	23.84	20.85	20.26	26.98	16.55	17.21	17.59	15.94	15.05	14.49	13.67	12.44	11.93	11.69	11.39	$-5.25	-31.6%	2021
Arizona	15.80	15.52	14.60	13.41	12.81	11.09	11.94	11.96	11.00	11.23	10.91	10.92	10.31	9.74	9.29	9.33	8.94	8.47	8.33	$-6.27	-42.9%	2028
Arkansas	10.24	11.76	11.81	13.00	11.05	9.87	11.93	12.99	10.63	10.42	10.29	10.28	11.49	11.87	10.93	10.80	10.95	10.51	10.86	$-0.95	-8.0%	2163
California	12.01	13.10	13.47	14.14	12.82	8.83	11.42	11.34	10.41	10.17	10.81	10.53	9.14	7.64	6.57	6.95	7.22	7.65	7.90	$-5.57	-41.4%	2017
Colorado	13.64	13.60	12.66	11.41	10.53	9.90	9.57	9.23	8.86	9.25	9.29	8.88	8.40	8.10	7.46	7.10	7.11	6.90	6.63	$-6.03	-47.6%	2023
Connecticut	7.40	6.76	8.26	7.68	7.12	6.15	6.48	6.32	6.55	6.84	6.22	6.08	6.01	5.68	5.56	5.46	5.28	5.18	5.21	$-3.05	-36.9%	2036
Delaware	11.18	11.50	10.91	10.71	11.69	10.64	11.07	10.90	10.67	10.00	9.91	9.84	9.03	8.65	8.23	9.03	8.80	7.88	7.72	$-3.19	-29.2%	2039
Florida	10.91	9.24	9.48	9.37	9.05	8.06	8.29	8.07	7.99	7.87	7.66	7.30	6.15	5.61	5.99	5.99	6.06	6.17	6.45	$-3.03	-32.0%	2025
Georgia	11.29	10.60	11.42	11.30	11.28	10.18	10.28	9.86	9.25	9.13	9.14	9.30	7.88	8.24	8.29	8.43	8.59	8.32	8.19	$-3.23	-28.3%	2039
Hawaii	12.74	17.25	16.80	15.95	15.83	15.17	15.14	15.40	16.10	16.15	15.90	14.49	14.17	14.21	14.70	14.09	11.97	12.03	11.59	$-5.21	-31.0%	2055
Idaho	14.78	16.57	16.34	13.58	12.47	10.94	11.65	12.06	12.37	12.24	12.46	13.24	12.70	12.09	11.42	11.77	11.38	11.26	10.52	$-5.82	-35.6%	2080
Illinois	9.45	9.00	9.34	8.76	8.28	7.73	8.29	8.27	7.40	7.35	8.21	7.85	7.42	7.18	7.07	7.19	7.10	7.15	7.08	$-2.26	-24.2%	2069
Indiana	9.32	10.73	10.42	9.93	9.81	8.89	9.51	9.43	9.75	9.82	9.82	9.93	9.59	9.28	8.81	8.44	8.37	8.29	8.27	$-2.15	-20.6%	2106
Iowa	9.65	12.77	13.77	13.10	12.51	11.88	12.62	11.25	11.60	11.87	12.09	13.12	11.77	12.45	11.94	12.44	11.80	11.96	11.68	$-2.09	-15.2%	2199
Kansas	10.47	12.73	13.39	12.91	11.78	10.88	11.51	10.89	10.10	10.21	11.31	11.07	9.91	10.19	9.78	9.99	9.90	9.48	9.44	$-3.95	-29.5%	2052
Kentucky	12.58	12.12	13.27	12.96	12.72	11.97	11.69	11.29	11.92	11.53	11.51	11.86	11.59	10.72	9.97	10.24	9.97	9.71	9.33	$-3.94	-29.7%	2057
Louisiana	12.54	11.55	12.03	12.39	12.76	10.26	12.19	11.87	10.21	9.44	9.65	10.35	9.38	9.70	8.34	8.27	7.81	7.84	8.49	$-3.54	-29.4%	2027
Maine	10.89	8.33	7.87	8.34	7.48	6.29	7.23	8.07	9.37	9.81	9.71	9.86	8.83	8.03	7.71	7.44	7.44	7.32	7.12	$-0.75	-9.5%	N.A.
Maryland	8.13	9.68	9.34	9.34	8.73	8.14	8.64	8.47	8.17	8.46	9.14	8.97	7.69	7.31	6.58	6.64	6.56	6.40	6.25	$-3.09	-33.1%	2039
Massachusetts	6.54	6.75	6.51	6.88	6.26	5.38	8.39	8.30	8.66	7.75	6.66	5.32	4.30	4.63	5.79	6.14	5.90	4.96	5.00	$-1.51	-23.2%	2055
Michigan	10.44	10.51	10.55	10.37	9.19	8.54	9.67	10.02	9.72	9.45	9.21	9.19	9.02	8.81	8.33	8.26	7.94	7.69	7.64	$-2.91	-27.6%	2071
Minnesota	9.71	14.20	13.88	14.53	12.96	13.07	12.70	13.11	12.82	12.74	13.19	13.38	12.11	11.39	11.02	10.86	10.50	9.88	9.88	$-4.00	-28.8%	2054
Mississippi	16.12	16.21	18.22	17.59	18.08	16.80	15.58	17.49	14.20	15.76	14.87	14.43	12.49	12.66	12.43	16.17	15.64	14.87	15.25	$-2.97	-16.3%	2066
Missouri	8.59	9.02	8.92	8.81	7.97	6.98	7.37	7.46	7.20	7.35	7.60	7.58	6.36	6.39	6.17	6.57	6.65	6.67	6.80	$-2.12	-23.8%	2052
Montana	11.33	11.62	11.81	11.42	12.43	12.73	13.22	12.45	10.87	10.54	10.57	10.28	10.81	9.93	8.73	7.74	8.04	7.88	7.50	$-4.31	-36.5%	2029
Nebraska	10.51	13.00	13.40	12.72	12.70	11.35	11.91	10.77	10.35	11.10	12.27	13.23	12.26	12.71	11.77	11.64	11.41	11.43	10.98	$-2.42	-18.1%	2242
Nevada	9.44	10.76	9.91	9.13	7.66	7.02	6.99	7.78	7.58	7.36	7.94	7.63	8.23	8.17	6.87	6.15	6.46	6.28	7.00	$-2.91	-29.4%	2061
New Hampshire	4.95	5.26	4.97	4.65	4.67	2.93	3.70	3.90	4.09	3.91	3.53	3.25	3.25	3.08	3.20	3.42	3.09	2.82	2.87	$-2.10	-42.3%	2029
New Jersey	6.73	6.41	6.33	6.23	5.76	5.31	5.56	7.31	7.14	7.23	6.73	5.74	5.87	5.91	5.93	5.98	6.24	5.89	5.40	$-0.93	-14.7%	N.A.
New Mexico	14.40	14.98	16.42	15.78	16.79	14.83	16.37	16.06	14.37	15.09	15.75	16.71	16.12	16.10	15.98	16.57	16.57	15.88	15.05	$-1.37	-8.3%	N.A.
New York	11.13	10.52	10.52	10.57	10.27	9.66	10.27	10.02	9.66	9.69	9.21	8.31	6.94	6.63	6.82	6.89	6.06	5.59	5.37	$-5.15	-49.0%	2018
No Carolina	14.93	15.11	15.91	15.82	16.00	15.23	16.13	16.13	16.30	15.57	15.71	14.86	13.34	13.58	13.25	13.28	12.71	12.20	12.34	$-3.57	-22.4%	2059
North Dakota	8.71	13.38	15.14	16.18	18.97	14.12	13.70	14.68	13.95	13.51	16.34	14.49	15.03	14.70	13.14	13.23	12.73	12.72	13.05	$-2.09	-13.8%	2082
Ohio	7.09	8.03	7.98	7.93	6.82	7.41	7.92	8.17	8.41	8.38	8.46	8.51	7.66	7.08	7.08	7.16	7.24	6.99	7.11	$-0.87	-10.9%	2233
Oklahoma	9.17	10.69	11.02	11.13	11.78	11.22	10.17	11.08	9.52	10.11	10.49	11.16	11.15	11.30	10.19	9.83	9.56	10.13	10.32	$-0.70	-6.4%	2137
Oregon	12.08	13.38	13.25	12.62	10.27	9.61	9.85	10.05	9.73	9.44	9.61	9.36	9.37	9.45	7.81	7.37	7.47	7.08	7.46	$-5.79	-43.7%	2028
Pennsylvania	8.17	9.39	8.46	8.12	7.36	5.83	7.23	7.26	6.94	6.98	6.99	6.84	6.67	6.01	6.18	6.18	6.14	5.81	5.74	$-2.72	-32.2%	2054
Rhode Island	9.99	11.97	10.48	10.23	9.50	9.16	9.44	8.95	8.88	9.05	8.62	7.88	6.15	6.16	5.62	5.90	5.86	5.51	5.71	$-4.77	-45.5%	2017
So Carolina	17.06	16.05	16.36	16.31	15.89	13.82	15.04	15.13	13.66	14.02	13.66	13.47	11.97	11.50	10.18	10.36	10.17	10.01	10.07	$-6.29	-38.4%	2024
South Dakota	9.98	11.41	11.09	10.54	9.64	7.81	8.45	7.93	8.85	8.70	9.46	9.34	8.85	9.24	9.22	8.78	8.26	8.30	7.88	$-3.21	-28.9%	2099
Tennessee	10.05	9.80	11.28	11.15	10.05	9.14	10.62	11.15	11.09	10.78	10.71	10.25	8.93	9.16	9.06	9.21	8.96	8.45	7.75	$-3.53	-31.3%	2067
Texas	9.44	13.33	11.94	13.08	13.99	12.84	12.87	10.97	9.92	9.65	10.68	9.67	9.90	9.37	9.85	9.01	9.05	8.00	8.35	$-3.59	-30.1%	2028
Utah	16.08	17.34	17.58	16.93	15.54	14.10	15.54	15.52	14.07	13.60	13.21	13.25	13.21	13.36	12.84	13.25	12.97	12.86	11.99	$-5.59	-31.8%	2047
Vermont	10.70	8.62	9.41	8.46	8.44	7.92	7.96	7.80	7.00	6.87	7.03	6.45	5.64	5.38	5.03	4.75	4.78	4.41	4.31	$-5.10	-54.2%	2014
Virginia	10.31	11.00	12.08	11.24	10.81	9.84	10.53	10.27	10.27	10.59	10.42	9.34	8.43	7.40	7.03	6.99	6.65	6.76	6.85	$-5.23	-43.3%	2021
Washington	13.15	14.00	13.81	14.59	11.66	11.01	10.82	10.59	10.13	10.16	10.32	10.00	9.74	9.31	8.81	8.24	8.33	8.33	7.92	$-5.89	-42.7%	[illegible]
West Virginia	12.53	12.91	13.31	12.88	12.60	11.41	12.23	12.27	11.66	12.08	11.42	11.46	11.29	11.05	10.69	10.34	10.50	10.52	10.64	$-2.67	-20.1%	2077
Wisconsin	15.08	13.94	13.53	13.30	12.06	11.69	11.46	11.02	10.60	10.42	10.55	10.54	10.02	10.16	9.76	9.81	9.15	8.48	8.32	$-5.21	-38.5%	2035
Wyoming	14.67	14.74	15.31	14.12	16.04	16.64	16.45	17.65	17.61	18.43	17.81	17.54	16.93	15.69	14.74	13.87	13.34	13.60	13.02	$-2.29	-15.0%	2138
All States	**$10.36**	**$11.05**	**$11.22**	**$11.16**	**$10.64**	**$10.45**	**$10.28**	**$10.22**	**$9.68**	**$9.60**	**$9.74**	**$9.39**	**$8.62**	**$8.21**	**$7.96**	**$7.99**	**$7.88**	**$7.65**	**$7.65**	**$-3.57**	**-31.8%**	**2036**

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Our data span the 24 year period between FY1975 and FY1998. In FY1998 21 states reached the lowest level of state tax support for higher education for any year in this 24 year span. These states are:

Alabama	**Michigan**
Alaska	**Montana**
Arizona	**New York**
Colorado	**Pennsylvania**
Delaware	**Tennessee**
Hawaii	**Utah**
Idaho	**Vermont**
Indiana	**Washington**
Kansas	**Wisconsin**
Kentucky	**Wyoming**
Maryland	

An additional eleven states reached their second worst state tax funding levels for higher education in FY1998:

Connecticut	**New Jersey**
Georgia	**North Carolina**
Illinois	**South Carolina**
Maine	**South Dakota**
Minnesota	**Texas**
New Hampshire	

At the same time, state tax funding for higher education appears to have bottomed-out and now is in very modest recovery:

California	**Mississippi**
Florida	**Nevada**
Missouri	**West Virginia**

FY1979 to FY1998

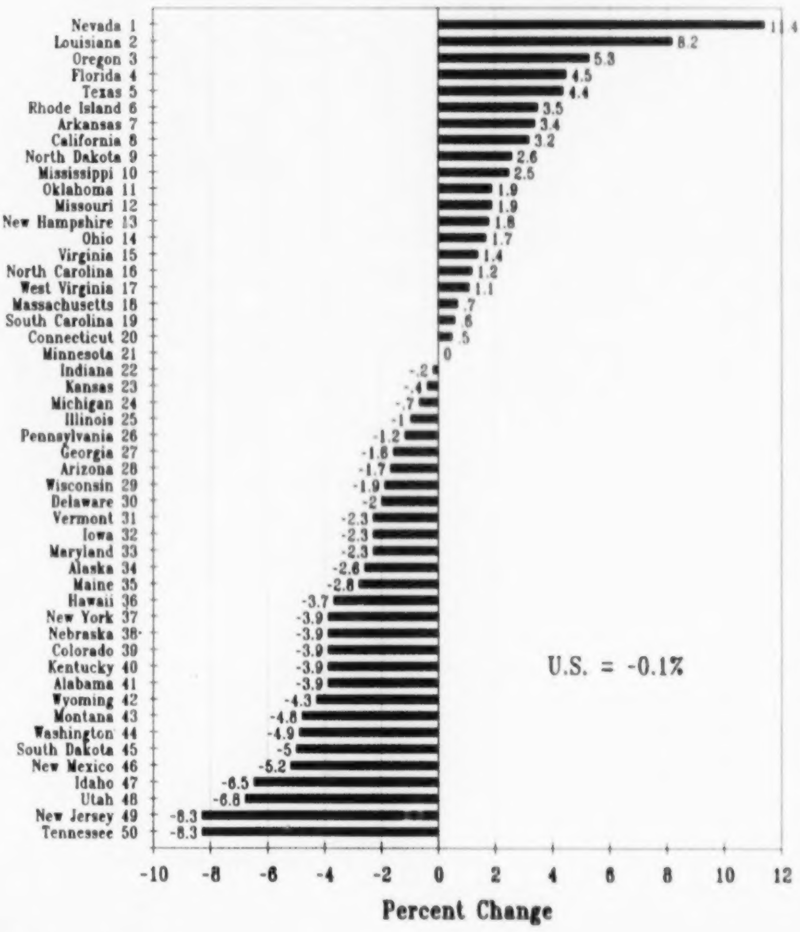
The decline is state tax fund appropriations per $1000 of personal income is now in its 18th year. If the trend continues, state tax funding of higher education will reach zero in the year 2036

Every one of the 50 states provided a smaller share of state personal income for higher education in FY1998 than it did in FY1979. In 48 of the 50 states tax support for higher education declined between FY1990 and FY1998. (The exceptions are **Arkansas and Mississippi.**)

The magnitude of these declines are readily calculable, and we have done so in the table on page 6. For all 50 states, the FY1998 state tax fund appropriation of $49.4 billion would have been $62.9 billion at FY1990 support levels. Effectively, states reduced their financial support for higher education by $13.5 billion in FY1998 compared to FY1990 support levels.

Compared to the peak support level reached in FY1979, FY1998 state tax fund appropriations would have been $72.5 billion. Thus, compared to FY1979 support levels, FY1998 state tax funding of higher education had been reduced by about $23.1 billion. The FY1998 level of state tax funding for higher education was 68 percent of the FY1979 support level.

The table on page 6 shows these calculations for each of the 50 states. For example, **Alabama's** FY1998 appropriation of $974 million would have been $1,267 million at FY1990 support levels, and $1,551 million at FY1979 support levels. Differences



Change in State Appropriation of Tax Funds for Higher Education per $1000 of Personal Income Between FY1997 and FY1998

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State Appropriations for Higher Education per $1000 of Personal Income in FY1998 with Comparisons to FY1980 and FY1979 State Appropriations Support Levels

State	FY1998 Approps (000)	1996 Personal Income (000,000)	FY1998 Approps per $1000 Pers Incm	FY1990 Approps per $1000 Pers Incm	FY1998 Approps at FY90 Levels (000)	Difference (000)	FY1979 Approps per $1000 Pers Incm	FY1998 Approps at FY79 Levels (000)	Difference (000)
Alabama	$974,992	$86,021	$11.33	$14.73	$1,267,089	$-292,097	$18.04	$1,551,819	$-576,827
Alaska	$168,614	$14,810	$11.39	$17.59	$260,508	$-91,894	$16.64	$246,438	$-77,824
Arizona	$787,659	$94,596	$8.33	$10.91	$1,032,042	$-244,383	$14.60	$1,381,102	$-593,443
Arkansas	$516,971	$47,584	$10.86	$10.29	$489,639	$27,332	$11.81	$561,967	$-44,996
California	$6,379,332	$807,975	$7.90	$10.81	$8,734,210	$-2,354,878	$13.47	$10,883,423	$-4,504,091
Colorado	$651,419	$98,258	$6.63	$9.29	$912,817	$-261,398	$12.66	$1,243,946	$-592,527
Connecticut	$577,502	$110,916	$5.21	$6.22	$689,898	$-112,396	$8.26	$916,166	$-338,664
Delaware	$155,128	$20,095	$7.72	$9.91	$199,141	$-44,013	$10.91	$219,236	$-64,108
Florida	$2,248,424	$348,849	$6.45	$7.66	$2,672,183	$-423,759	$9.48	$3,307,089	$-1,058,665
Georgia	$1,383,597	$168,959	$8.19	$9.14	$1,544,285	$-160,688	$11.42	$1,929,512	$-545,915
Hawaii	$348,407	$30,072	$11.59	$15.90	$478,145	$-129,738	$16.80	$505,210	$-156,803
Idaho	$248,249	$23,591	$10.52	$12.46	$293,944	$-45,695	$16.34	$385,477	$-137,228
Illinois	$2,250,609	$318,061	$7.08	$8.21	$2,611,281	$-360,672	$9.34	$2,970,690	$-720,081
Indiana	$1,091,733	$132,001	$8.27	$9.82	$1,296,250	$-204,517	$10.42	$1,375,450	$-283,717
Iowa	$743,226	$63,613	$11.68	$12.09	$769,081	$-25,855	$13.77	$875,951	$-132,725
Kansas	$562,484	$59,585	$9.44	$11.31	$673,906	$-111,422	$13.39	$797,843	$-235,359
Kentucky	$717,175	$76,885	$9.33	$11.51	$884,946	$-167,771	$13.27	$1,020,264	$-303,089
Louisiana	$725,989	$85,548	$8.49	$9.65	$825,538	$-99,549	$12.03	$1,029,142	$-303,153
Maine	$185,929	$26,124	$7.12	$9.71	$253,664	$-67,735	$7.87	$205,596	$-19,667
Maryland	$875,428	$140,068	$6.25	$9.14	$1,280,222	$-404,794	$9.34	$1,308,235	$-432,807
Massachusetts	$906,702	$181,505	$5.00	$6.66	$1,208,823	$-302,121	$6.51	$1,181,598	$-274,896
Michigan	$1,827,908	$239,330	$7.64	$9.21	$2,204,229	$-376,321	$10.55	$2,524,932	$-697,024
Minnesota	$1,180,519	$119,530	$9.88	$13.19	$1,576,601	$-396,082	$13.88	$1,659,076	$-478,557
Mississippi	$727,918	$47,735	$15.25	$14.87	$709,819	$18,099	$18.22	$869,732	$-141,814
Missouri	$838,559	$123,366	$6.80	$7.60	$937,582	$-99,023	$8.92	$1,100,425	$-261,866
Montana	$126,734	$16,896	$7.50	$10.57	$178,591	$-51,857	$11.81	$199,542	$-72,808
Nebraska	$415,858	$37,862	$10.98	$12.27	$464,567	$-48,709	$13.40	$507,351	$-91,493
Nevada	$291,721	$41,699	$7.00	$7.94	$331,090	$-39,369	$9.91	$413,237	$-121,516
New Hampshire	$88,813	$30,939	$2.87	$3.53	$109,215	$-20,402	$4.97	$153,767	$-64,954
New Jersey	$1,352,032	$250,295	$5.40	$6.73	$1,684,485	$-332,453	$6.33	$1,584,367	$-232,335
New Mexico	$484,858	$32,217	$15.05	$15.75	$507,418	$-22,560	$16.42	$529,003	$-44,145
New York	$2,851,604	$530,655	$5.37	$9.21	$4,887,333	$-2,035,729	$10.52	$5,582,491	$-2,730,887
North Carolina	$2,007,092	$162,602	$12.34	$15.71	$2,554,477	$-547,385	$15.91	$2,586,998	$-579,906
North Dakota	$171,690	$13,159	$13.05	$16.34	$215,018	$-43,328	$15.14	$199,227	$-27,537
Ohio	$1,863,307	$262,077	$7.11	$8.46	$2,217,171	$-353,864	$7.98	$2,091,374	$-228,067
Oklahoma	$666,024	$64,514	$10.32	$10.49	$676,752	$-10,728	$11.02	$710,944	$-44,920
Oregon	$551,133	$73,922	$7.46	$9.61	$710,390	$-159,257	$13.25	$979,467	$-428,334
Pennsylvania	$1,715,676	$299,031	$5.74	$6.99	$2,090,227	$-374,551	$8.46	$2,529,802	$-814,126
Rhode Island	$138,813	$24,331	$5.71	$8.62	$209,733	$-70,920	$10.48	$254,989	$-116,176
South Carolina	$744,238	$73,890	$10.07	$13.66	$1,009,337	$-265,099	$16.36	$1,208,840	$-464,602
South Dakota	$120,651	$15,303	$7.88	$9.46	$144,766	$-24,115	$11.09	$169,710	$-49,059
Tennessee	$904,670	$116,760	$7.75	$10.71	$1,250,500	$-345,830	$11.28	$1,317,053	$-412,383
Texas	$3,559,663	$426,212	$8.35	$10.68	$4,551,944	$-992,281	$11.94	$5,088,971	$-1,529,308
Utah	$469,938	$39,199	$11.99	$13.21	$517,819	$-47,881	$17.58	$689,118	$-219,180
Vermont	$56,991	$13,227	$4.31	$7.03	$92,986	$-35,995	$9.41	$124,466	$-67,475
Virginia	$1,153,457	$168,300	$6.85	$10.42	$1,753,686	$-600,229	$12.08	$2,033,064	$-879,607
Washington	$1,103,896	$139,356	$7.92	$10.32	$1,438,154	$-334,258	$13.81	$1,924,506	$-820,610
West Virginia	$352,763	$33,155	$10.64	$11.42	$378,630	$-25,867	$13.31	$441,293	$-88,530
Wisconsin	$1,001,272	$120,325	$8.32	$10.55	$1,269,429	$-268,157	$13.53	$1,627,997	$-626,725
Wyoming	$135,034	$10,371	$13.02	$17.81	$184,708	$-49,674	$15.31	$158,780	$-23,746
TOTAL	$49,402,401	$6,461,374	$7.65	$9.74	$62,933,783	$-13,531,382	$11.22	$72,496,616	$-23,094,215

between these support levels and what was actually appropriated are also shown. The percentage decline in state tax funding of higher education per $1000 of state personal income is shown in the table on page 4.

Moreover, extrapolation of these trends produces a y-intercept of zero for 47 of the 50 states. That is to say, in all states but three, extrapolating the trend of declining state tax fund appropriations for higher education per $1000 of personal income produces the year when state funding of higher education will reach zero. The three exceptions are **Maine, New Jersey** and **New Mexico**, where the trend is flat. In the other 47 states, state appropriations for higher education will reach zero first in **Vermont** in FY2014. Vermont will reach this milestone first because it has reduced its state tax fund appropriations for higher education per $1000 of personal income by 54.2 percent since FY1979.

Vermont's "achievement" will be followed three years later when **California** and **Rhode Island** reduce their state tax funding to zero. A year later, in FY2018, **New York's** funding will reach zero. By FY2029 12 more states will have reduced their funding for higher education to zero. By FY2100, 40 states will have zeroed-out state funding for higher education.

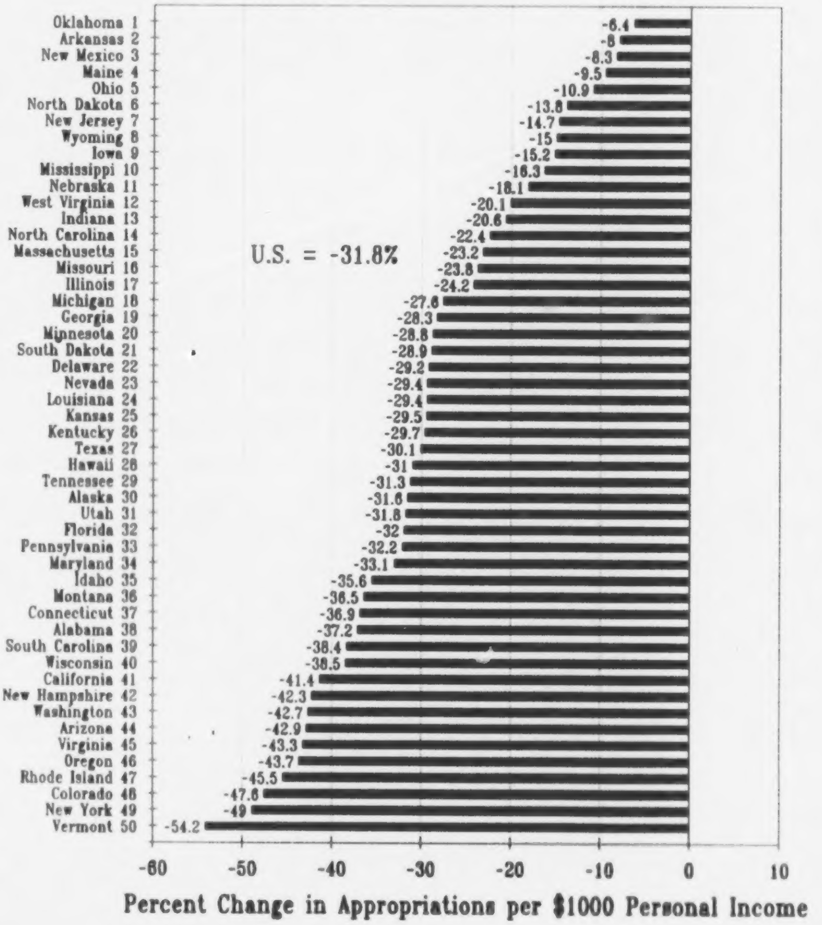
Conclusions

State funding of higher education examined separately from the social purposes of higher education is merely an amusing exercise. But examined in the context of an economy that has become heavily dependent on the higher education of its workforce, this funding picture describes a profoundly consequential paradox: while higher education's importance is growing, state investment is declining.

The higher education funding decisions reflected in the data here are matters of *choice*. This analysis of state tax fund appropriations *per $1000 of personal income* is structured to control for the resources available to each state to fund higher education. Thus, the resources are available. This is not some impoverished third world country that lacks resources to finance social programs. This is a rich country at the peak of its prosperity. The states have consciously *chosen* to reduce state funding for higher education.

Politicians are fond of apologizing for their decisions--including funding decisions--by saying they had no choice. They had to spend money in certain ways because circumstances required them to do so. This, of course, is pure nonsense. As President Clinton has demonstrated this year, although funding for the Pell Grant program had been allowed to deteriorate for more than 15 years, he could suddenly find $35 billion in the federal budget for Hope Tuition Tax Credits for middle income families when he felt he needed to do so. At the state level, appropriations data for the last decade have revealed state preferences for funding corrections, Medicaid and tax cuts at the expense of higher education.

These are choices governors and legislators have made. These choices have had measurable consequences including the rationing of higher educational opportunity (with the burden born almost entirely by students from low and middle-income family backgrounds) and a growing imbalance between the educational attainment of the workforce and the educated worker needs of employers. We currently have a surplus of unskilled workers, and a shortage of workers at the highest levels of educational attainment.



Change in Appropriations of State Tax Funds for Operating Expenses of Higher Education per $1000 of Personal Income Between FY1979 and FY1998

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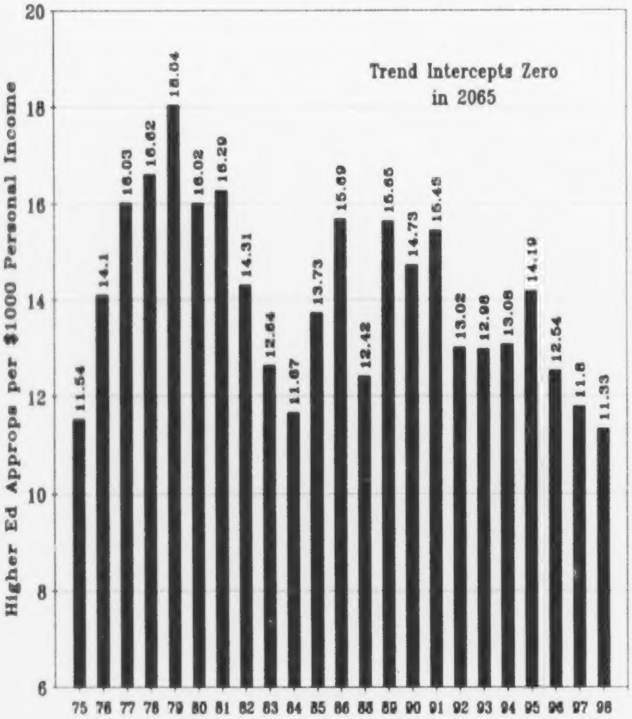
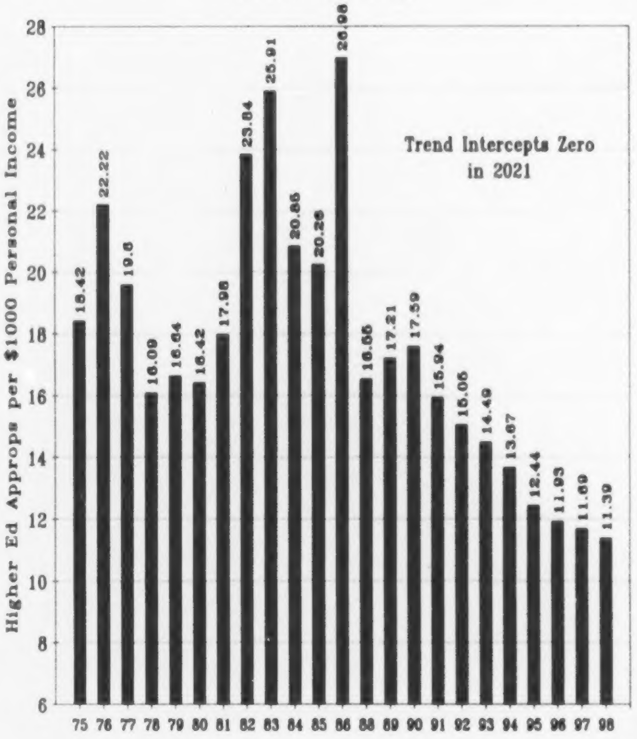
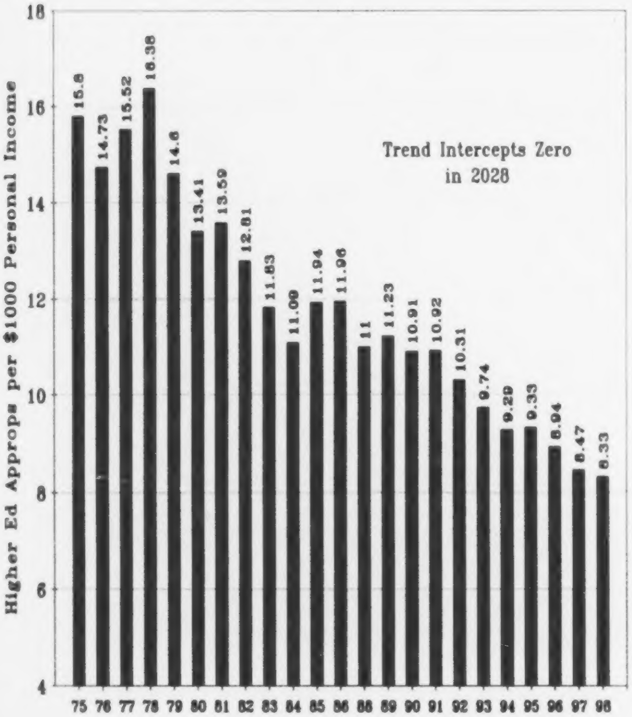
Alabama Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998



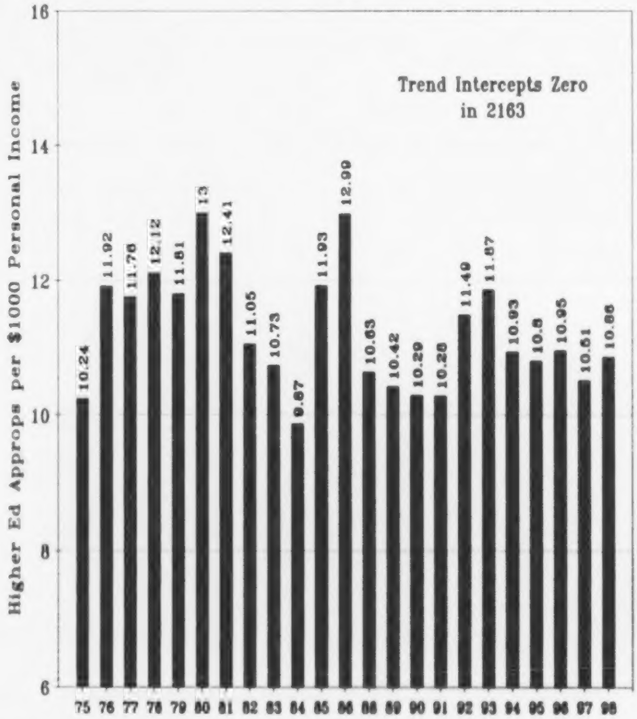
Alaska Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998

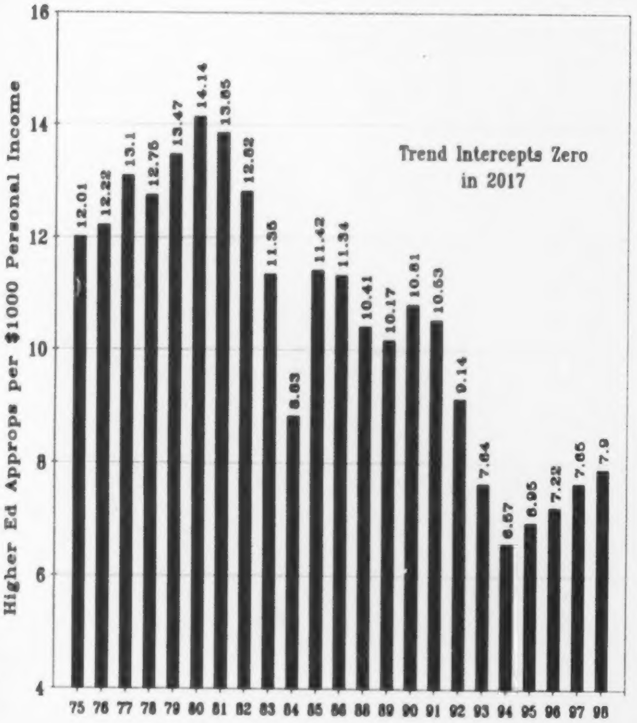


Arizona Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998

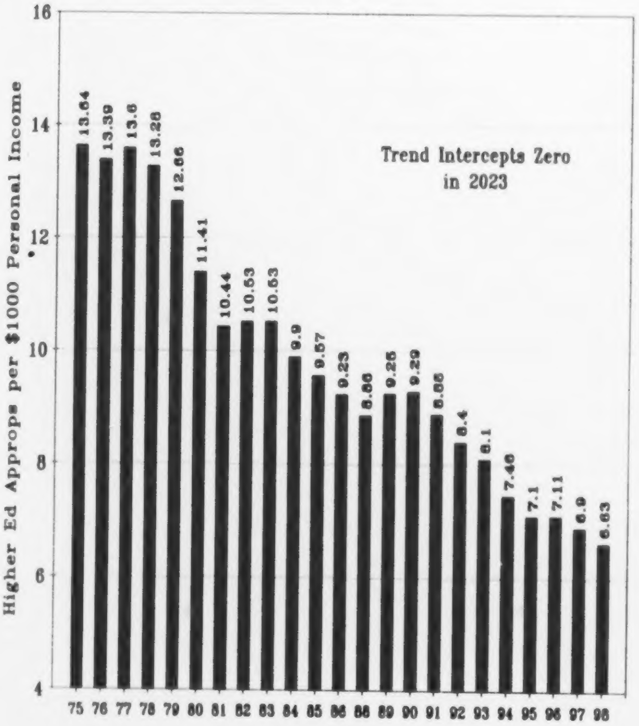


Arkansas Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998

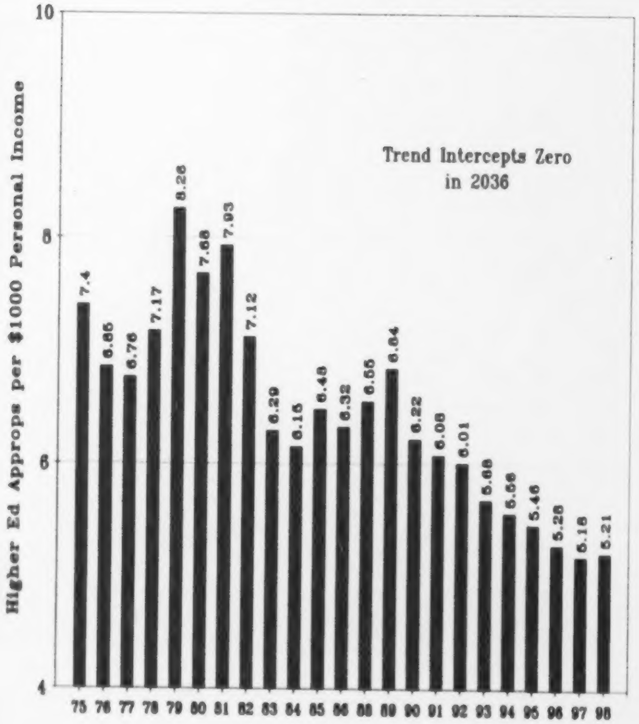




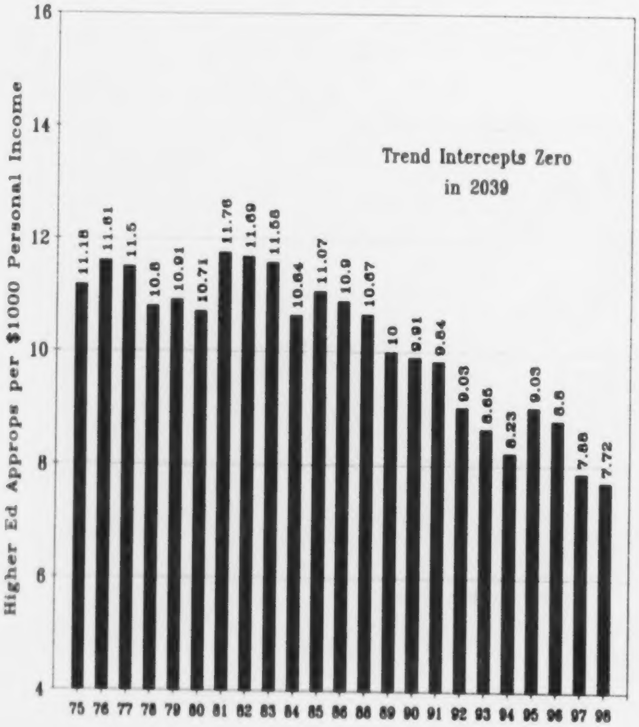
California Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998



Colorado Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998

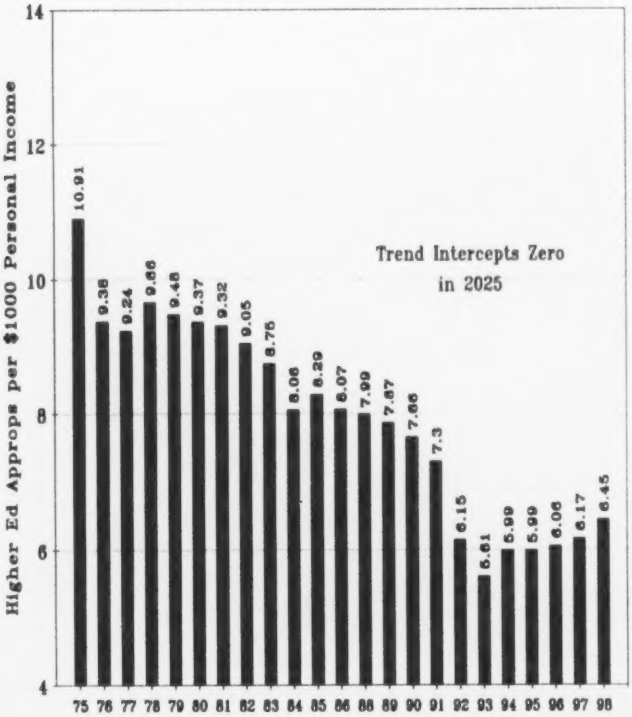


Connecticut Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998

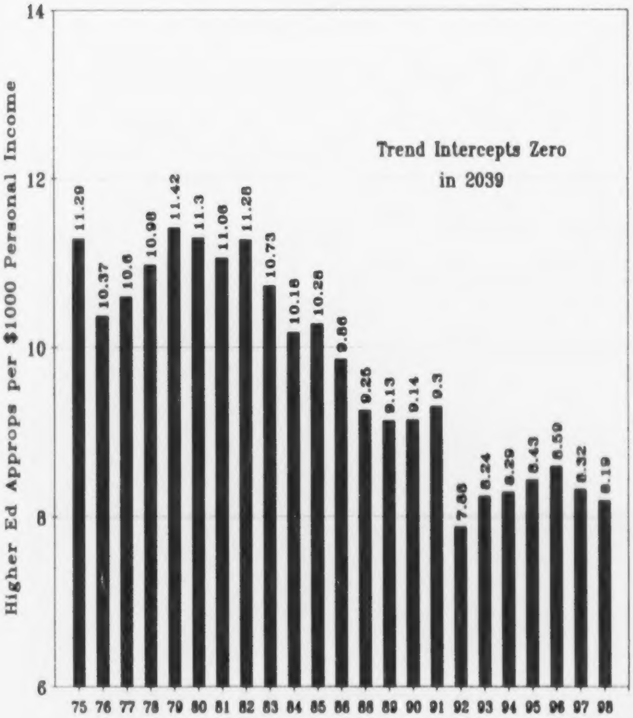


Delaware Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998

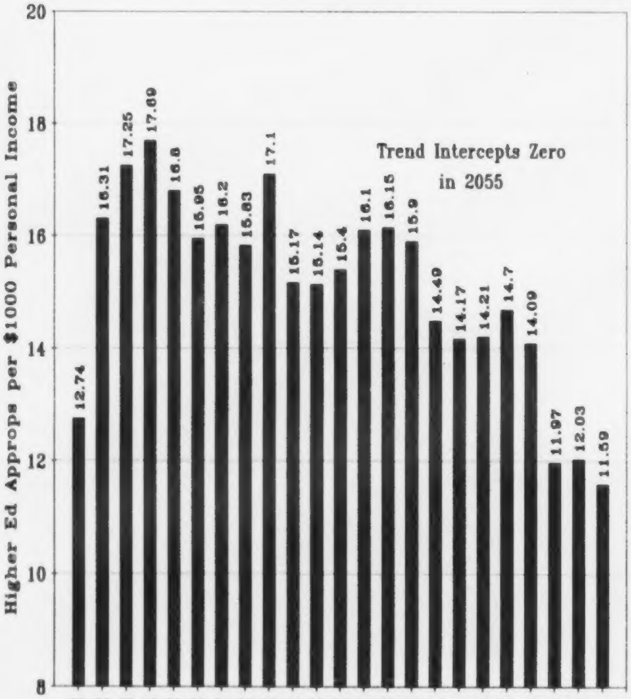
Florida Appropriations of State Tax Funds for
Higher Education per $1000 of Personal Income
FY1975 to FY1998



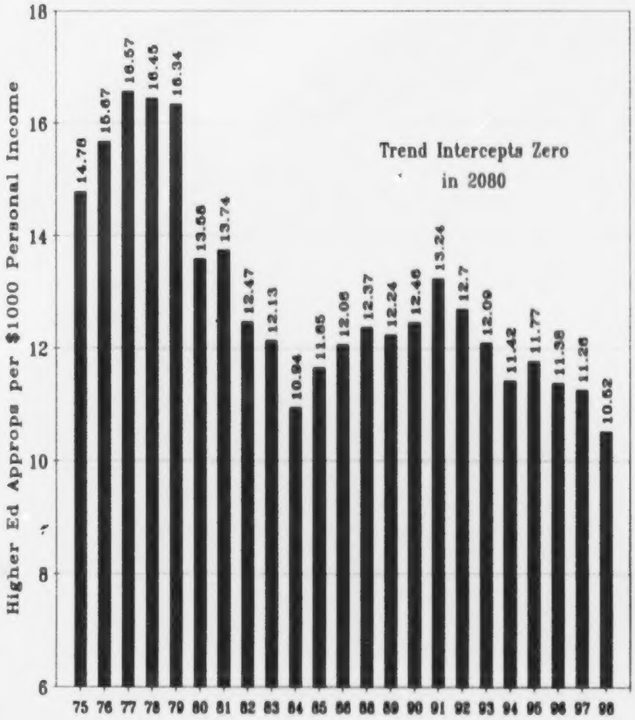
Georgia Appropriations of State Tax Funds for
Higher Education per $1000 of Personal Income
FY1975 to FY1998

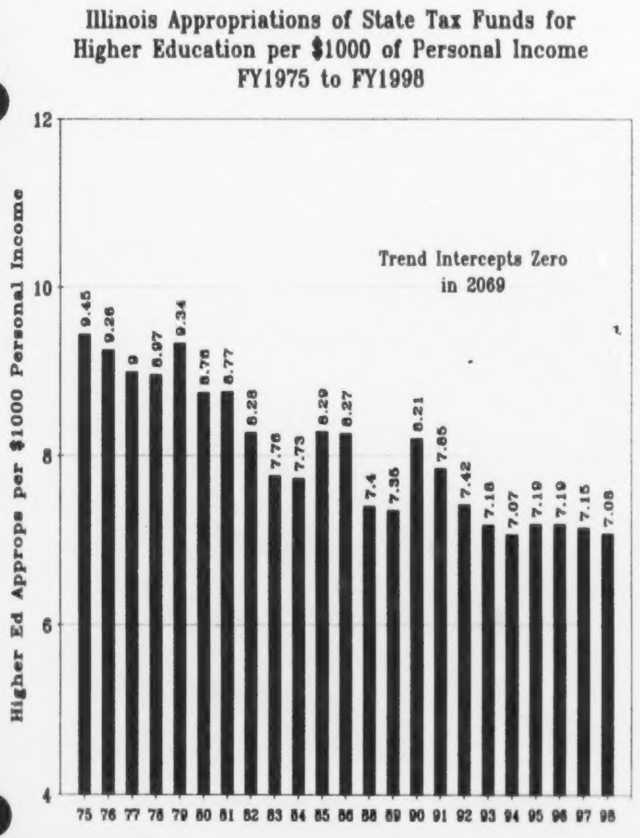


Hawaii Appropriations of State Tax Funds for
Higher Education per $1000 of Personal Income
FY1975 to FY1998

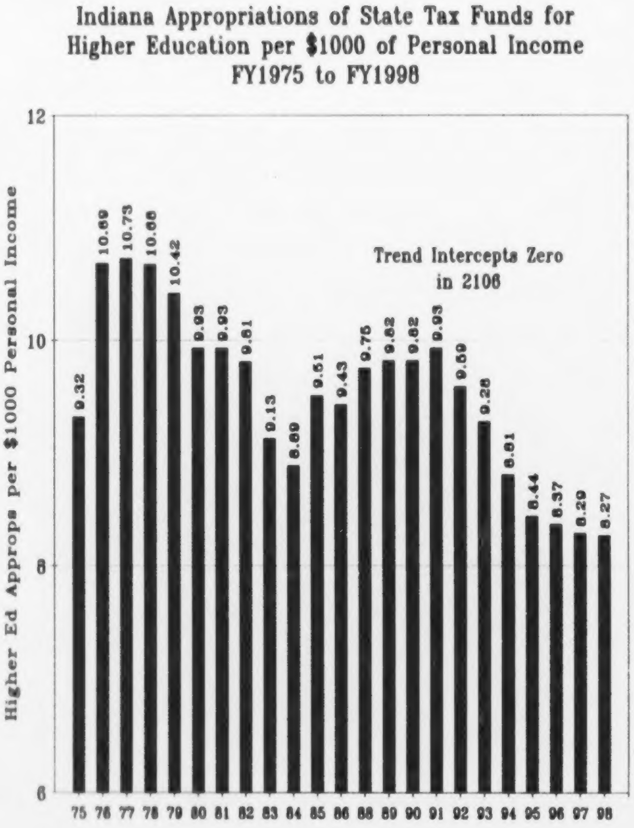


Idaho Appropriations of State Tax Funds for
Higher Education per $1000 of Personal Income
FY1975 to FY1998

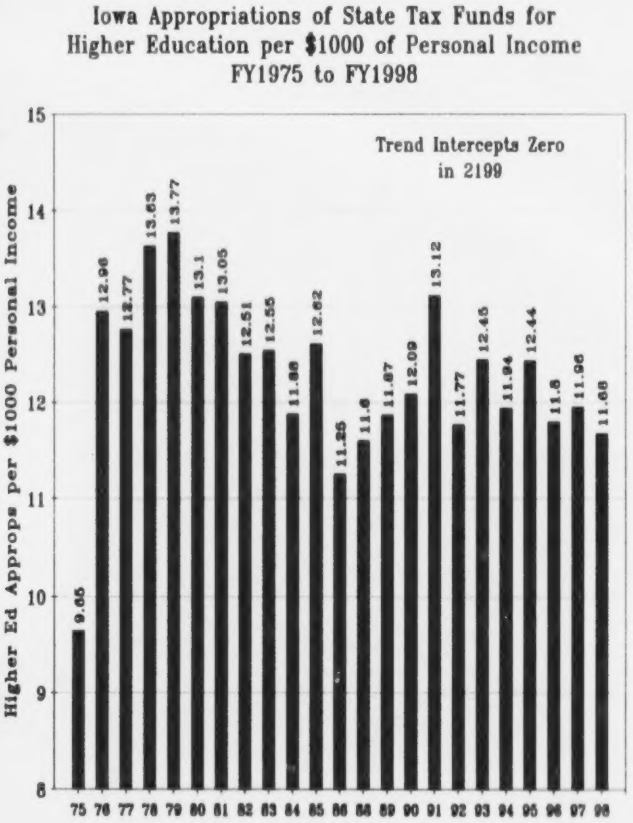




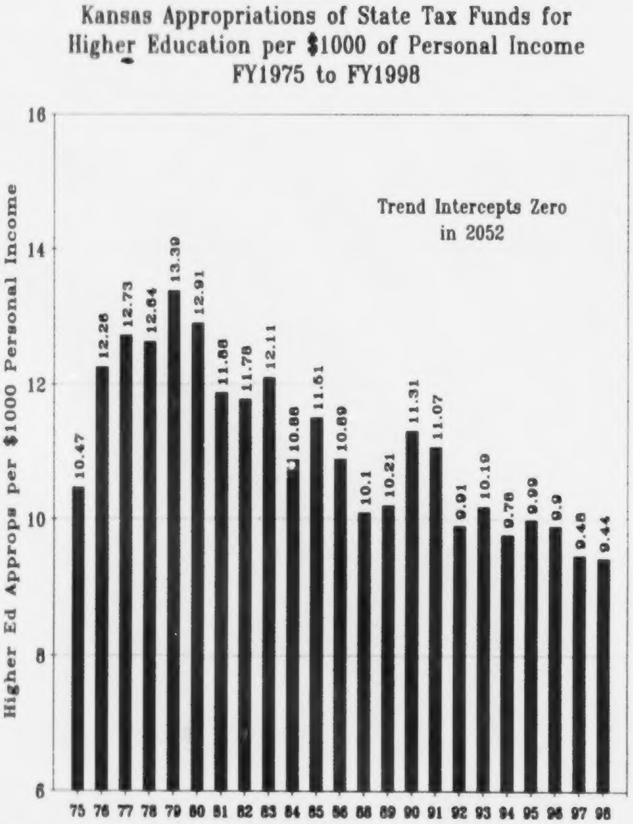
Illinois Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998



Indiana Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998



Iowa Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998



Kansas Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998

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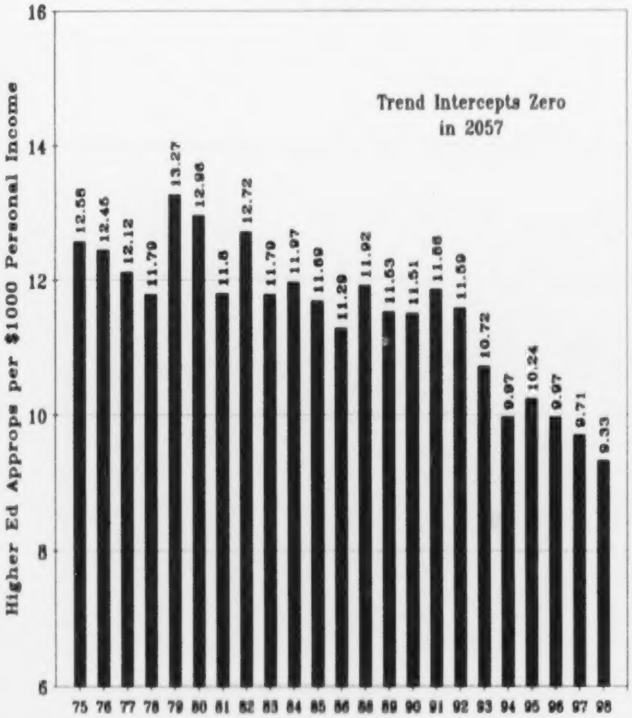
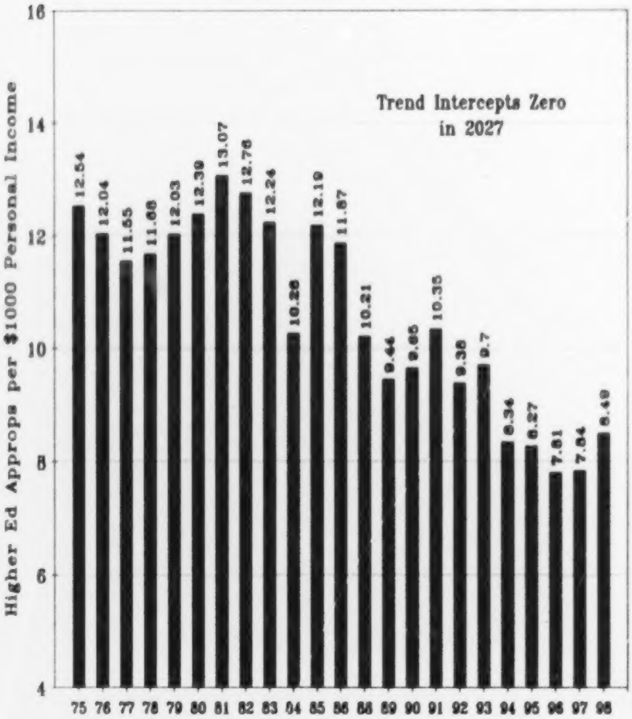
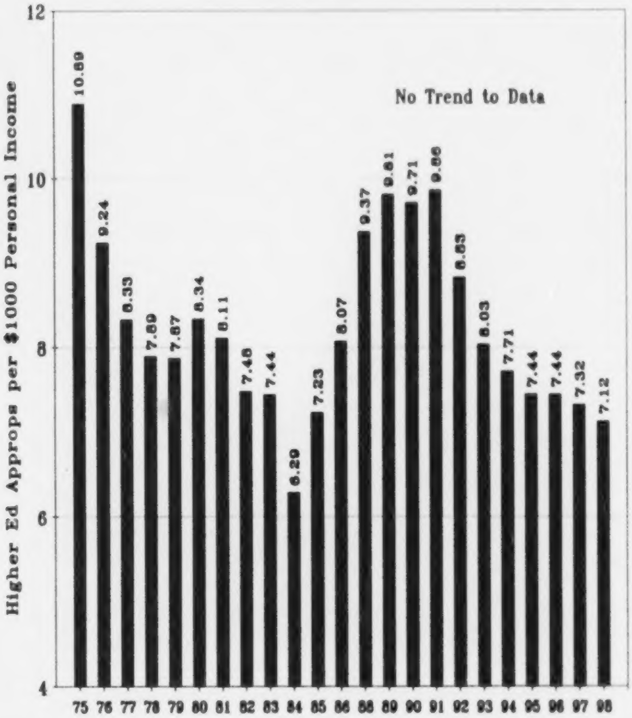
Kentucky Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998



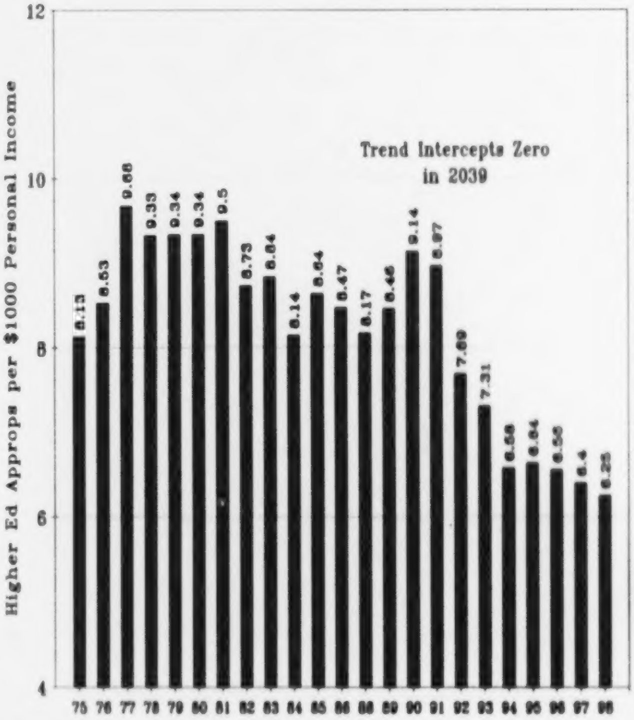
Louisiana Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998



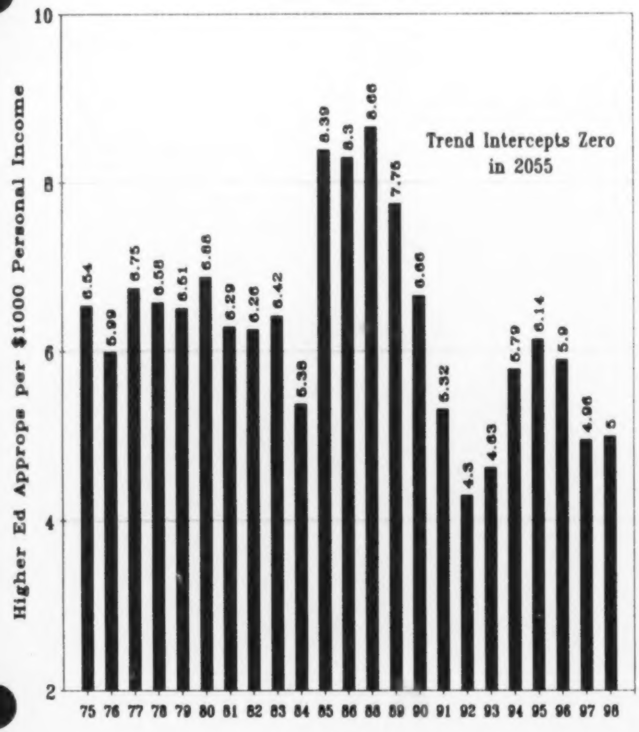
Maine Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998



Maryland Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998



Massachusetts Appropriations of State Tax Funds for Higher Education per $1000 of Personal Income FY1975 to FY1998



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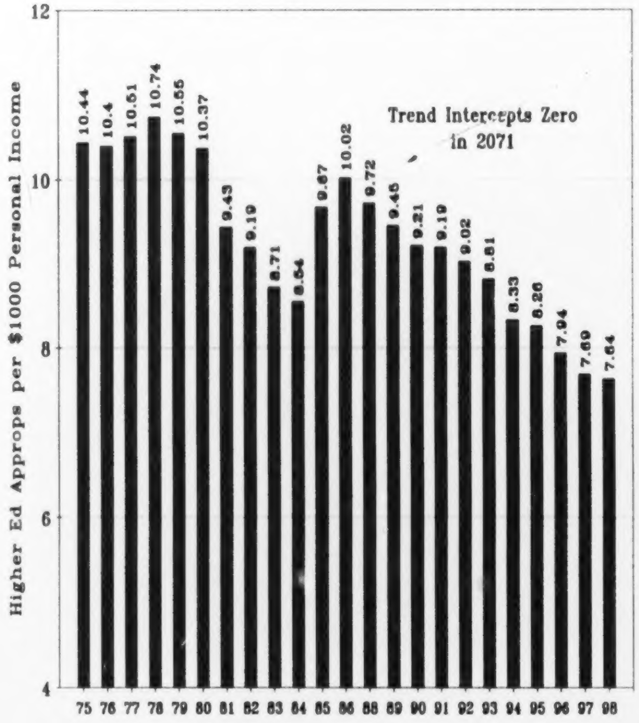

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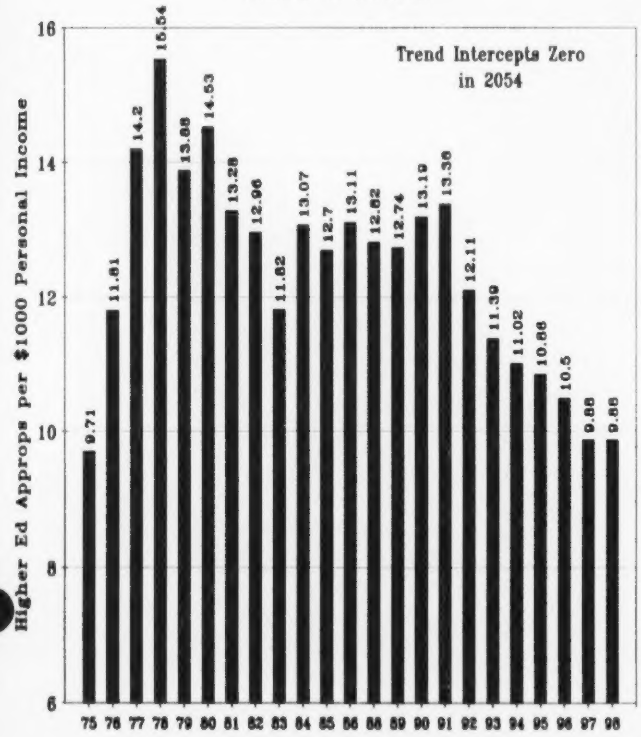

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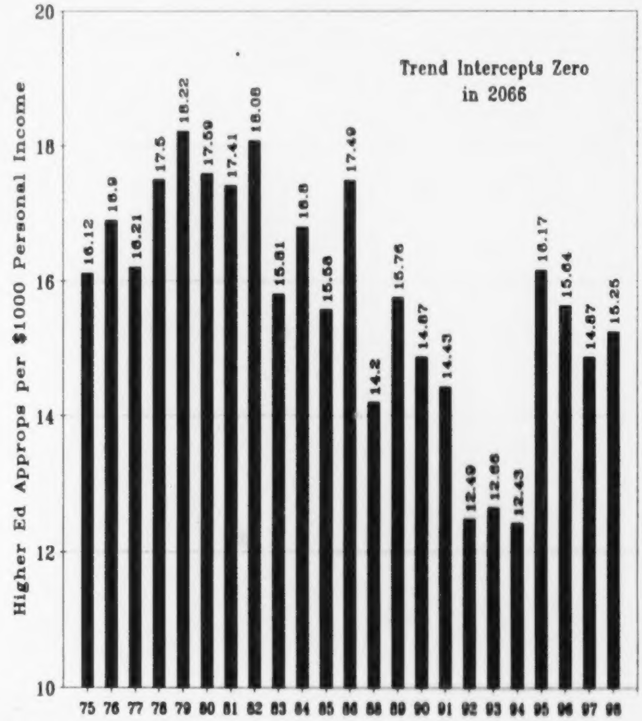

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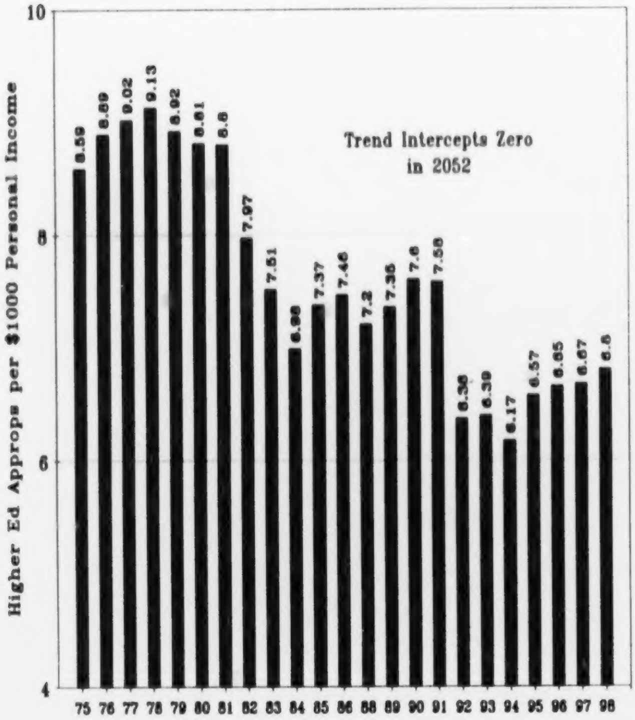

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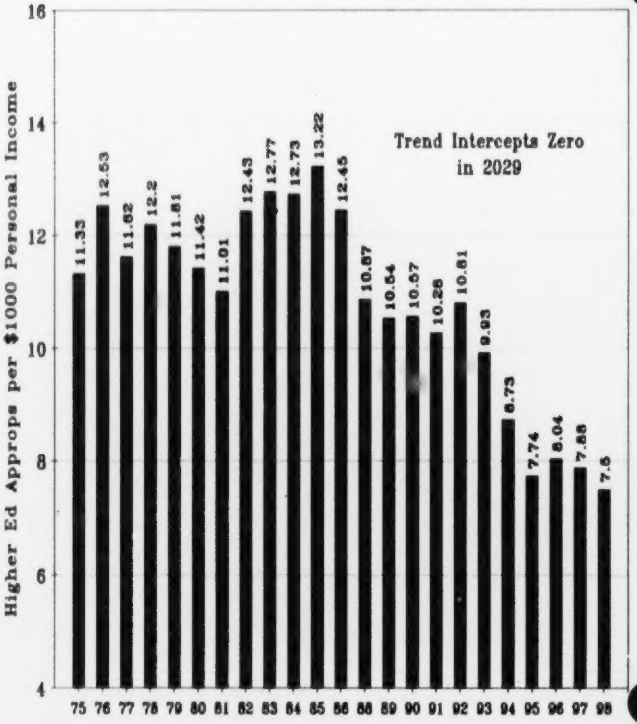

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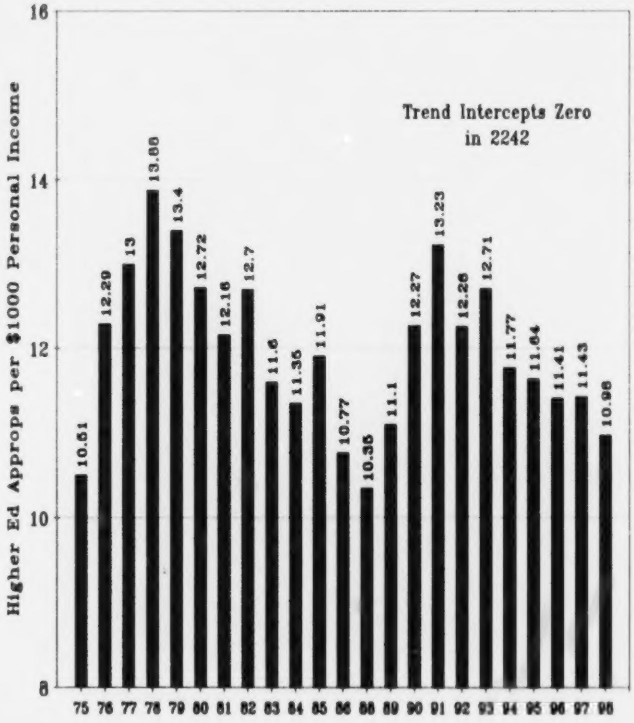

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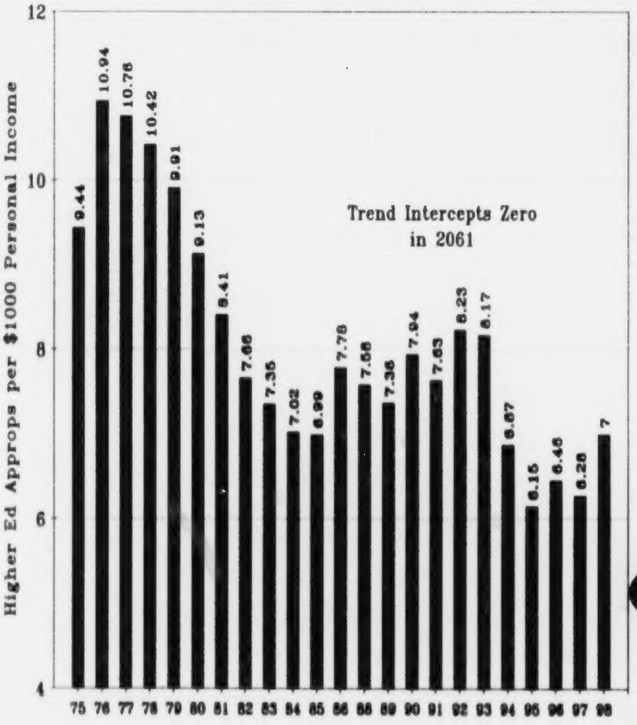

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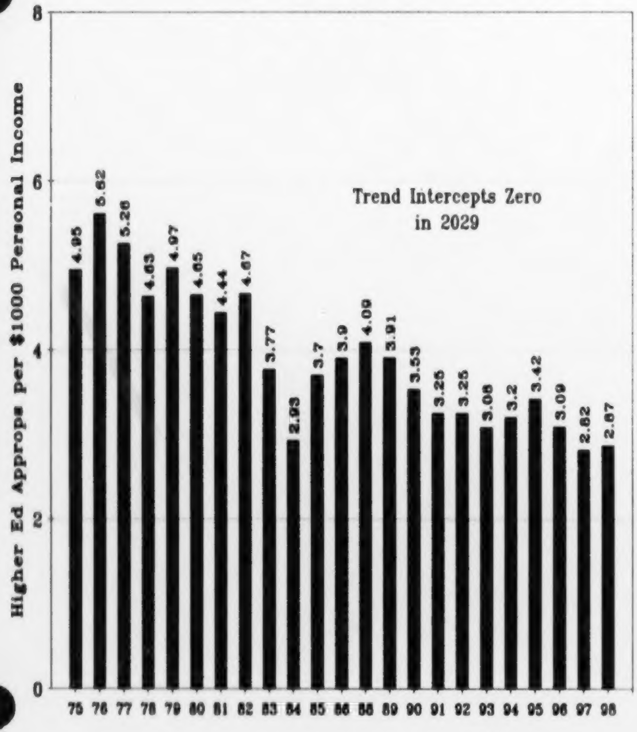

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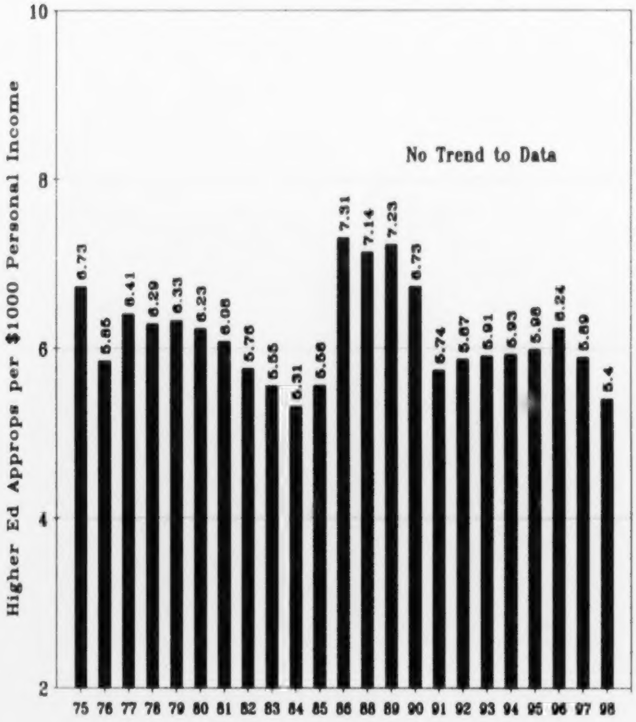

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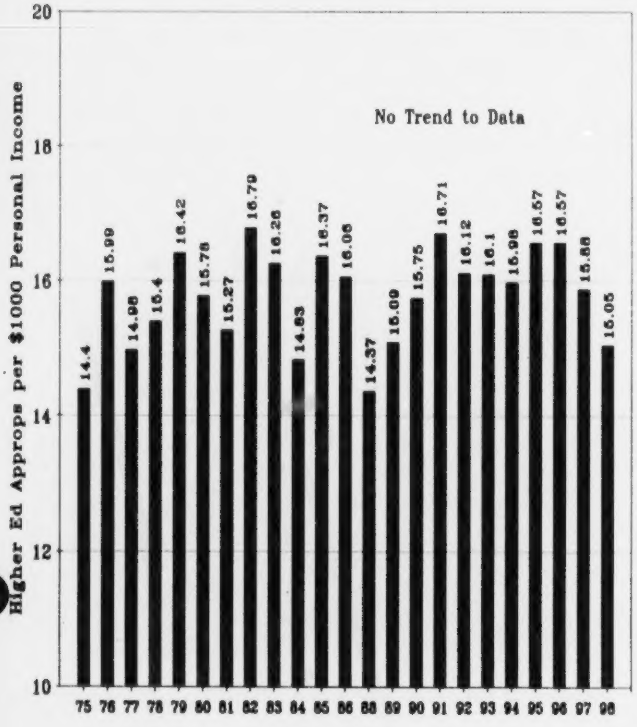

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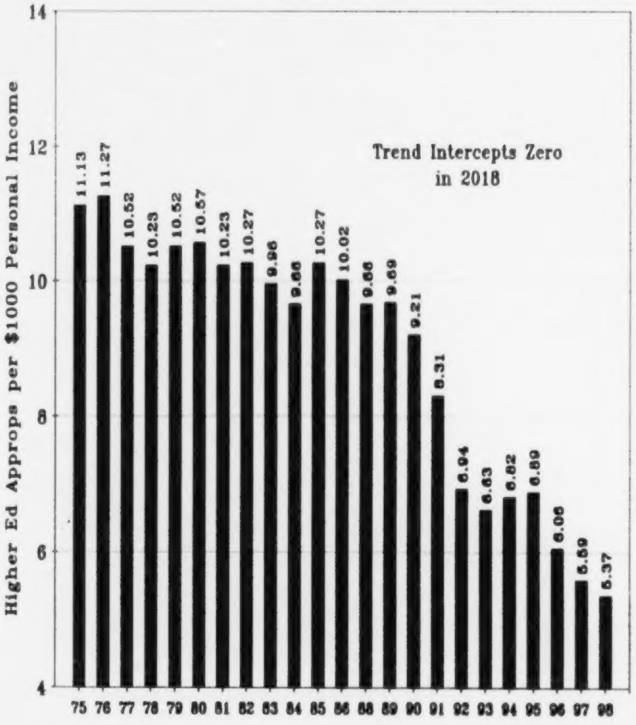

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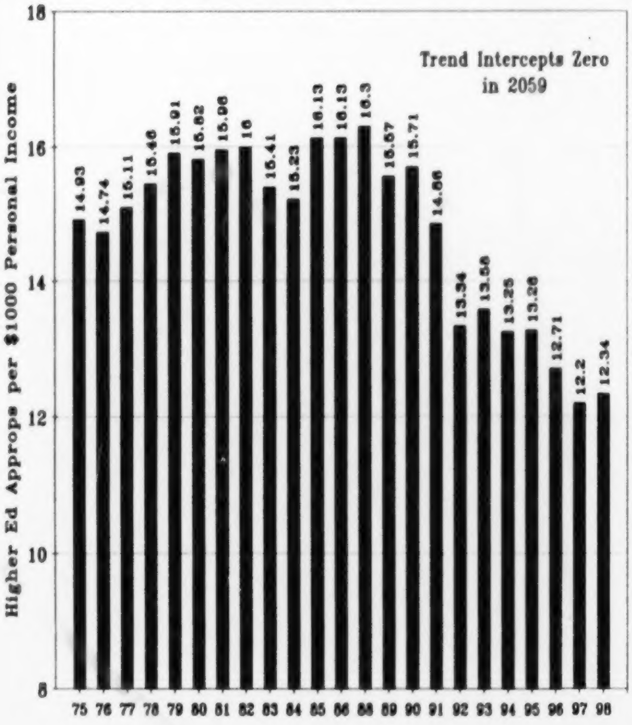

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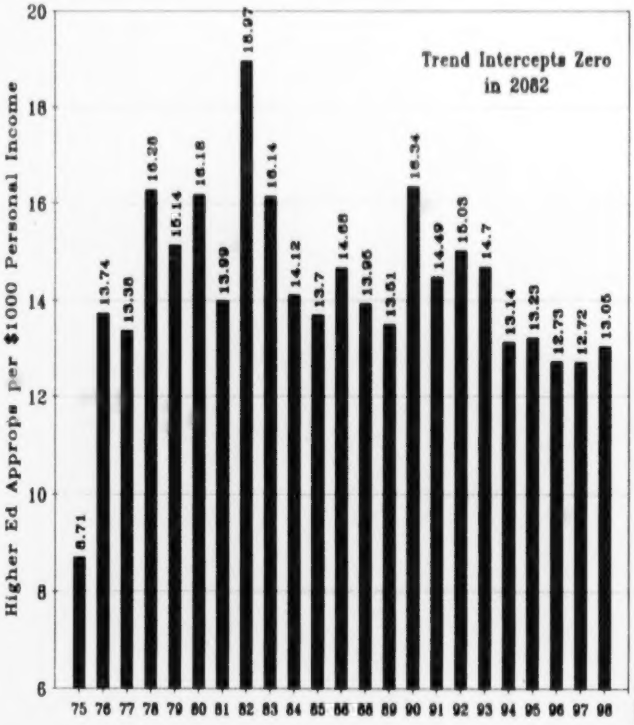

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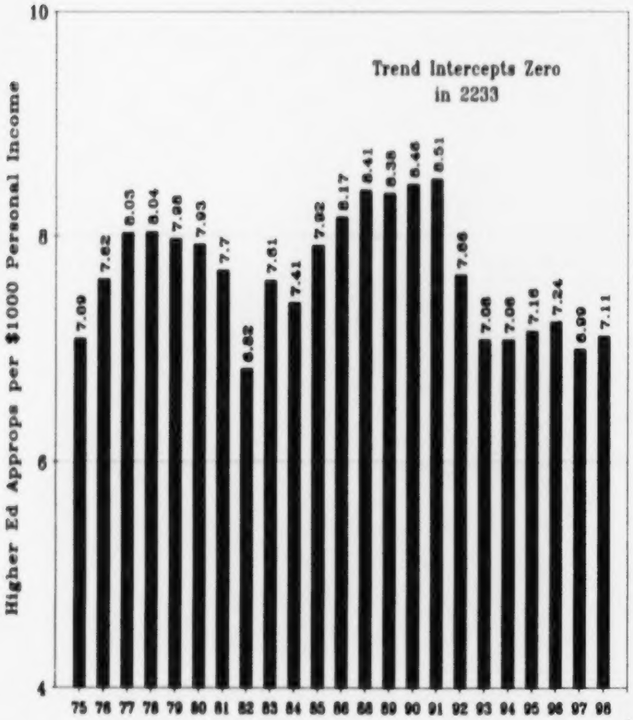

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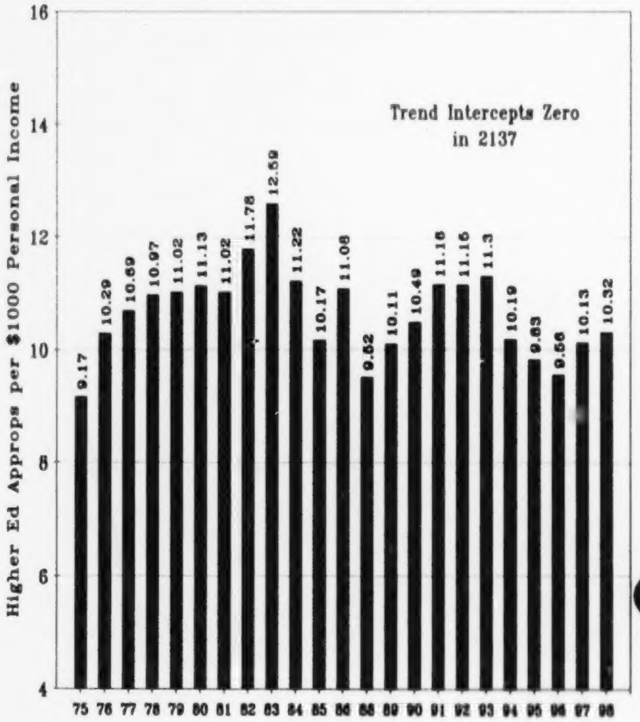

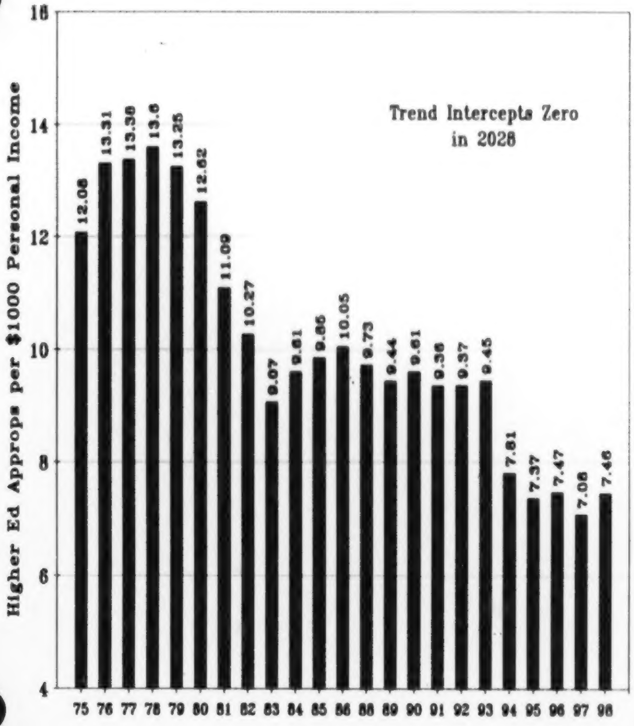
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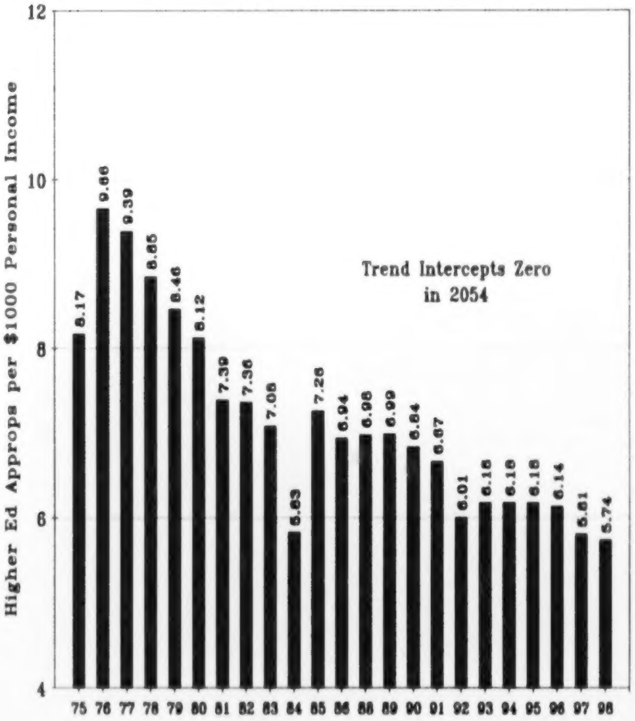
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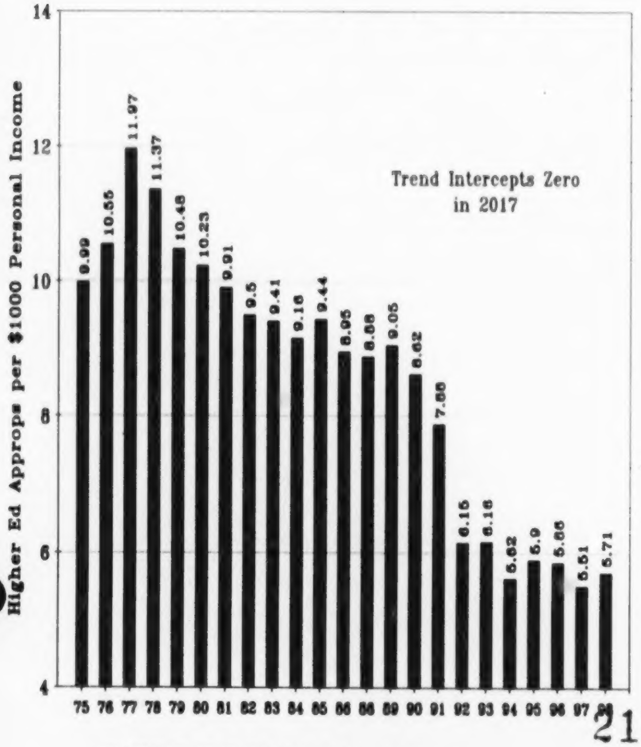
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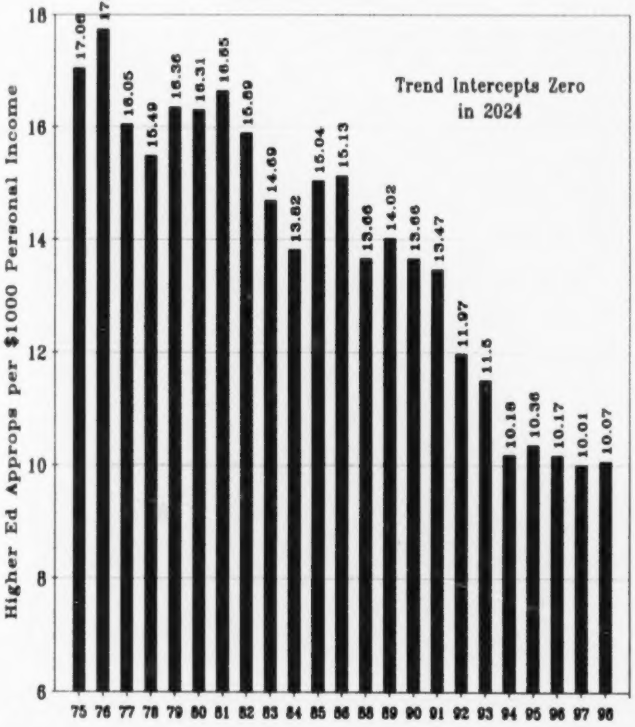
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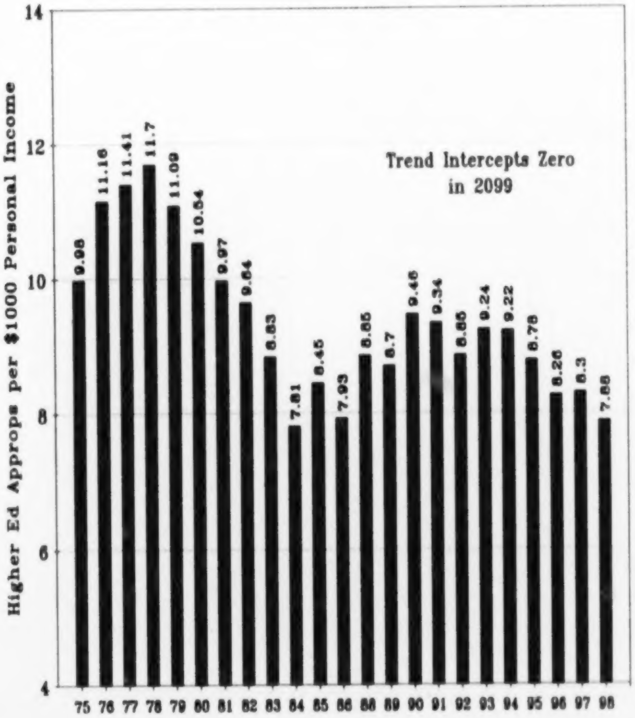
FY1975 to FY1998



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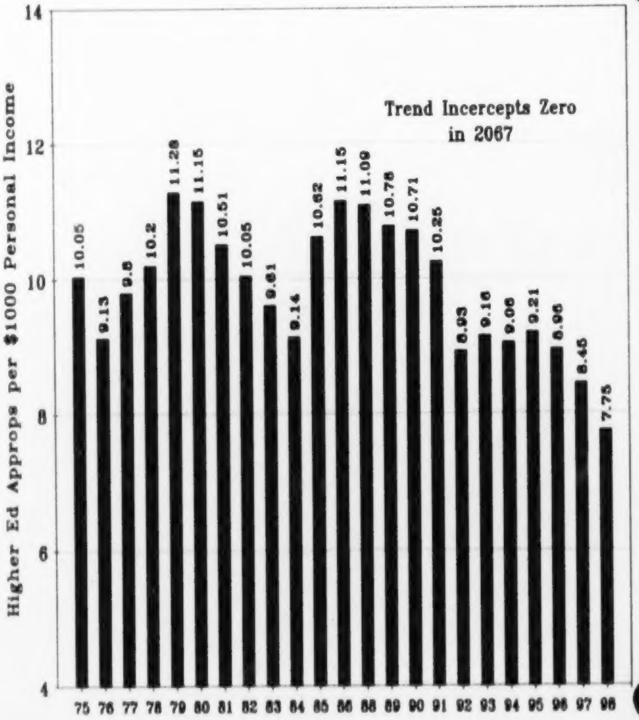

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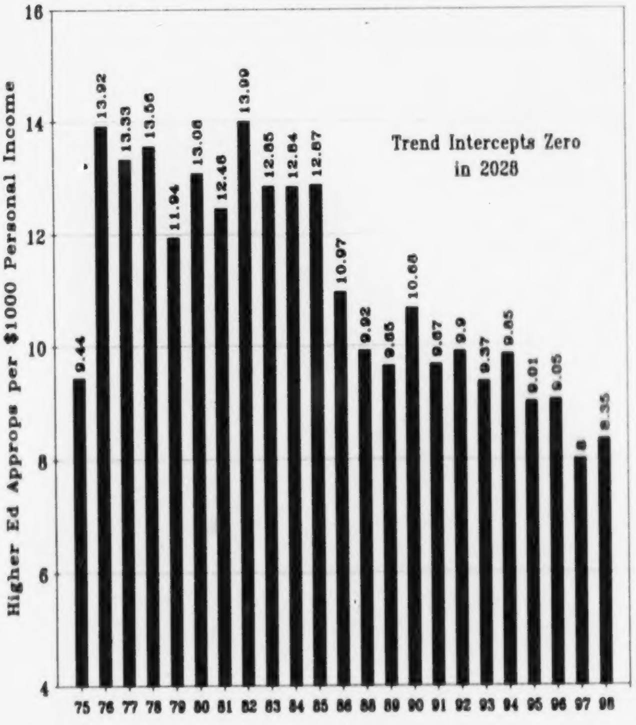

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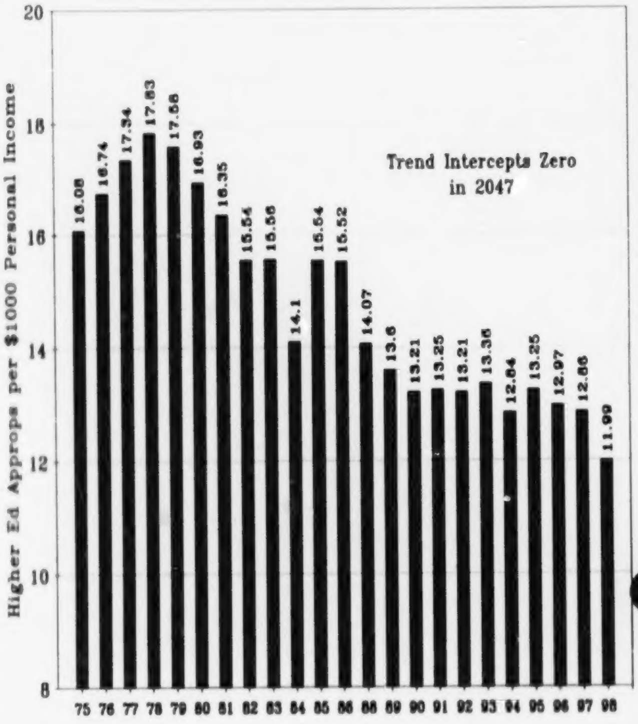

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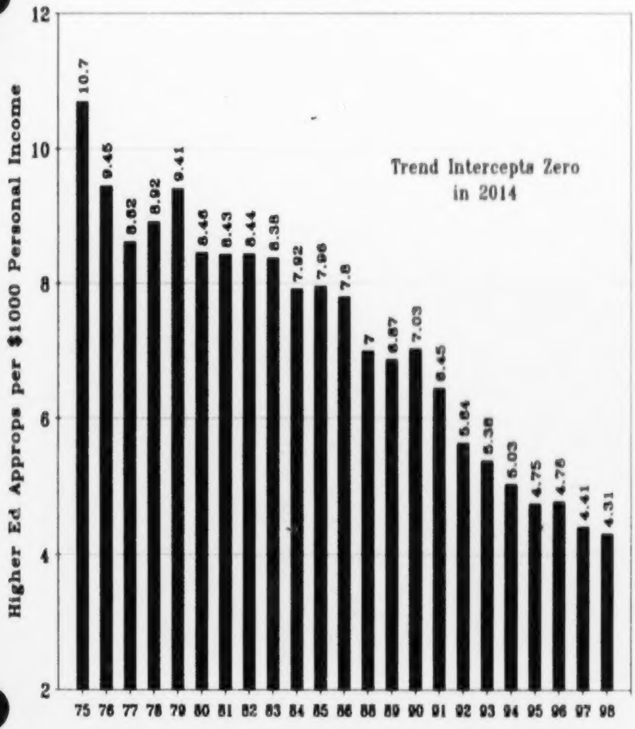

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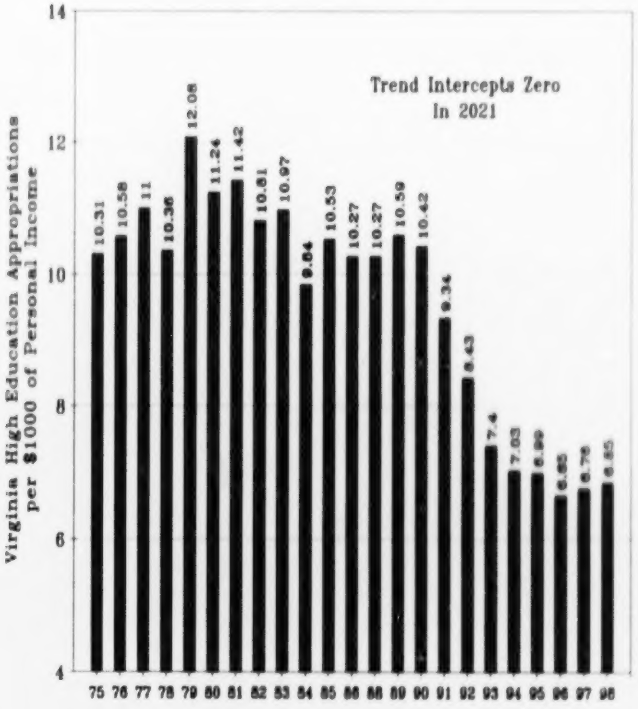

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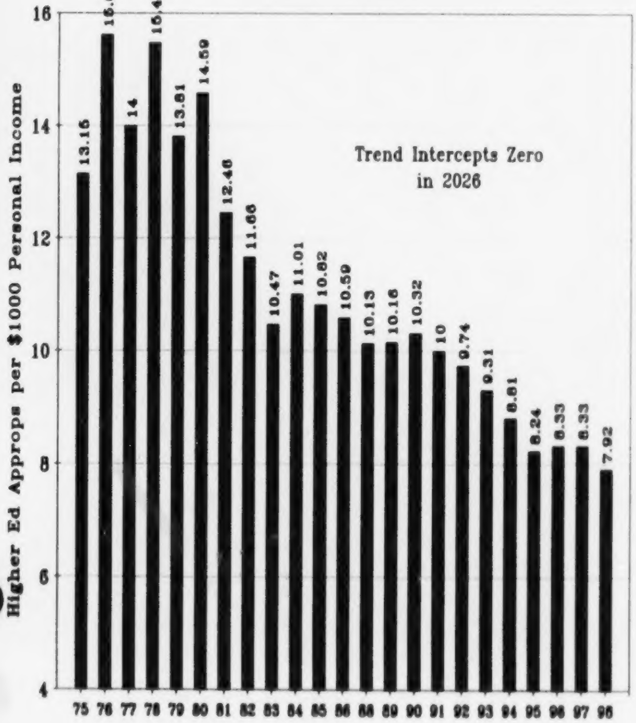

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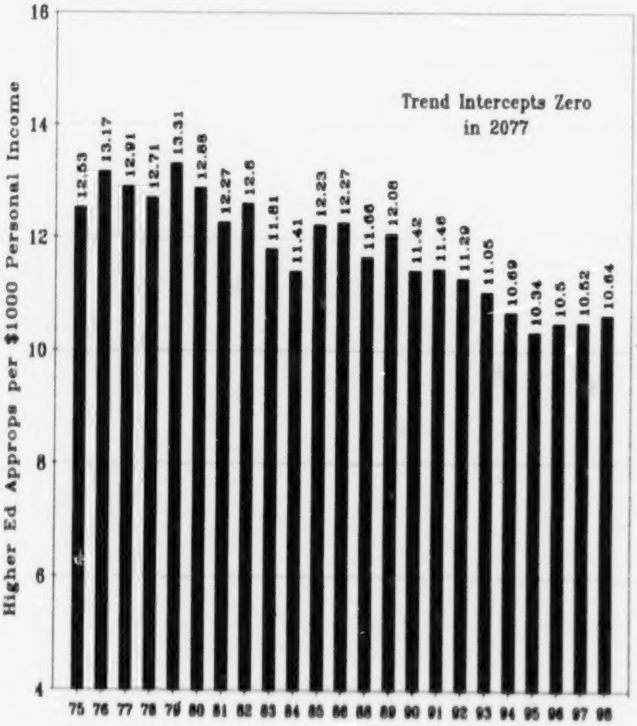

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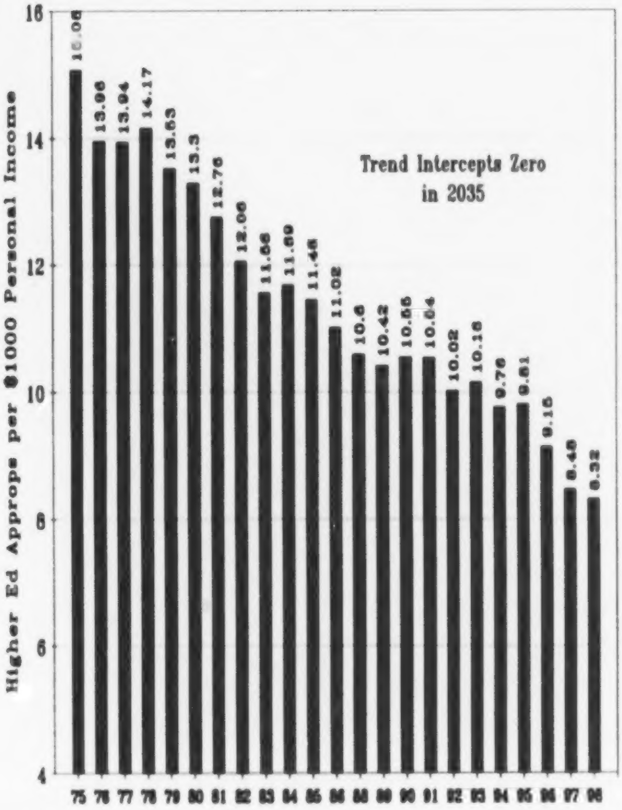

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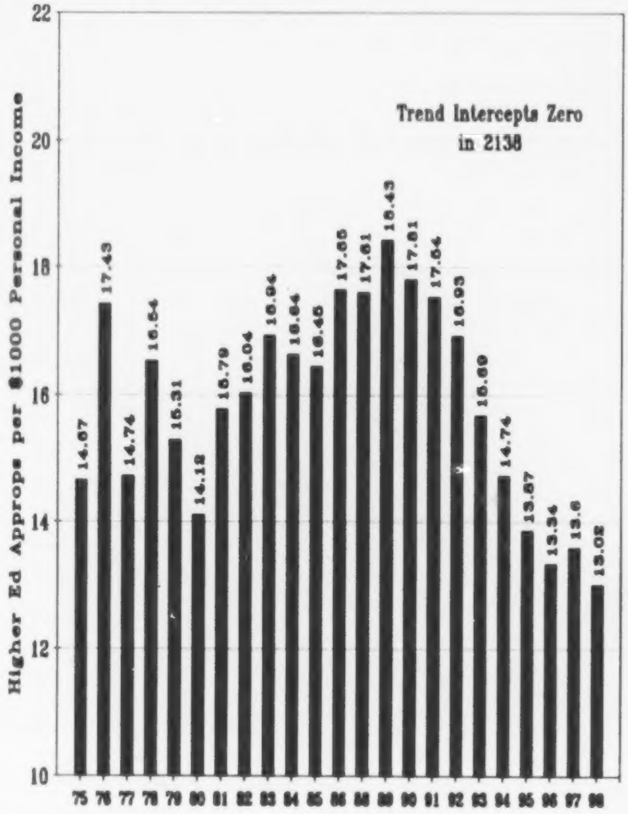

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The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 66 **Oskaloosa, Iowa** **December 1997**

Academic Preparation for College 1983 to 1997

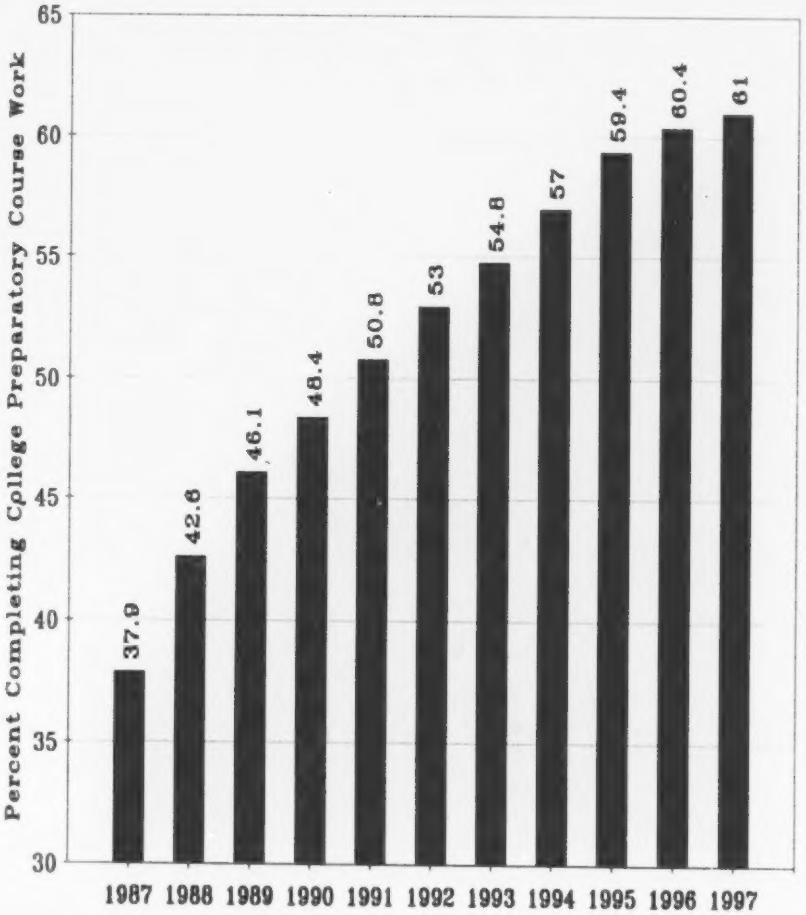
In 1983 the National Commission on Excellence in Education released its alarming report, **A Nation at Risk**. The Commission said:

> *Our society and its educational institutions seem to have lost sight of the basic purposes of schooling, and of the high expectations and disciplined effort needed to attain them.*

More will be taken from the Commission's report in this analysis of the response to the challenges posed. But this analysis focuses on the response of public policy and student course-taking and academic preparation for college to the first of the five recommendations of the Commission:

> *We recommend that State and local high school graduation requirements be strengthened and that, at a minimum, all students seeking a diploma be required to lay the foundations in the Five New Basics by taking the following curriculum during their 4 years of high school: (a) 4 years of English; (b) 3 years of mathematics; (c) 3 years of science; (d) 3 years of social studies; and (e) one-half year of computer science. For the college-bound, 2 years of foreign language in high school are strongly recommended . . .*

College Core Coursework Completion Rate
for ACT-Tested College Bound High School Seniors
1987 to 1997



In July of 1995 **OPPORTUNITY** reported the results of three federal transcript studies of student completion of this New Basics Curriculum. These studies found that the proportion of high school seniors completing the New Basics had increased from 12.7 percent in 1982 to 46.8 percent by 1992.

In this report we examine and report on the academic preparation for college of two similar groups of students: college-bound high school seniors who took the ACT Assessment, and first-time, full-time college freshmen participating in the

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annual national survey of American College Freshmen by the Higher Education Research Institute at UCLA. Our framework for academic preparation is the New Basics Curriculum proposed by the National Commission on Excellence in Education in 1983.

What our analysis finds is that high school students have greatly improved their high school course selection in preparation for college, precisely as recommended by the Commission in 1983. As a result, students overall are entering college better academically prepared than they were 15 years ago. These gains are broad, affecting nearly every group of students.

The measures examined here, however, also identify serious remaining trouble spots:

- Some groups of students--particularly low income, some minorities--are not entering college well prepared to meet the academic challenges of college.
- Gains in academic preparation are (inevitably) uneven, with women showing more progress than men.
- Moreover, the gains in academic preparation appear to be slowing.

To the extent public policy is guided by the findings of this kind of analysis, resources could and should be targeted to address the gross inequalities that remain.

The National Commission on Excellence in Education

In August of 1981, then Secretary of Education T. H. Bell created the National Commission on Excellence in Education and directed the Commission to present a report on the quality of education in America by April of 1983. The Commission set out to define the problems afflicting American education and to offer solutions.

The Commission's final report was delivered on schedule in April, 1983. Its title described its theme: *A Nation at Risk: The Imperative for Educational Reform.* The Commission's complete report is available on the internet at:

www.inet.gov/pubs/NatAtRisk

The Commission's report makes for sobering reading. It begins:

> *Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science and technological innovation is being overtaken by competitors throughout the world. This report is concerned with only one of the many causes and dimensions of the problem, but it is one that undergirds American prosperity, security, and civility. We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. What was unimaginable a generation ago has begun to occur--others are matching and surpassing our educational attainments.*
>
> *If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war. As it stands, we have allowed this to happen to ourselves. We have even squandered the gains in student achievement made in the wake of the Sputnik challenge. Moreover, we have dismantled essential support systems which helped make those gains possible. We have,*

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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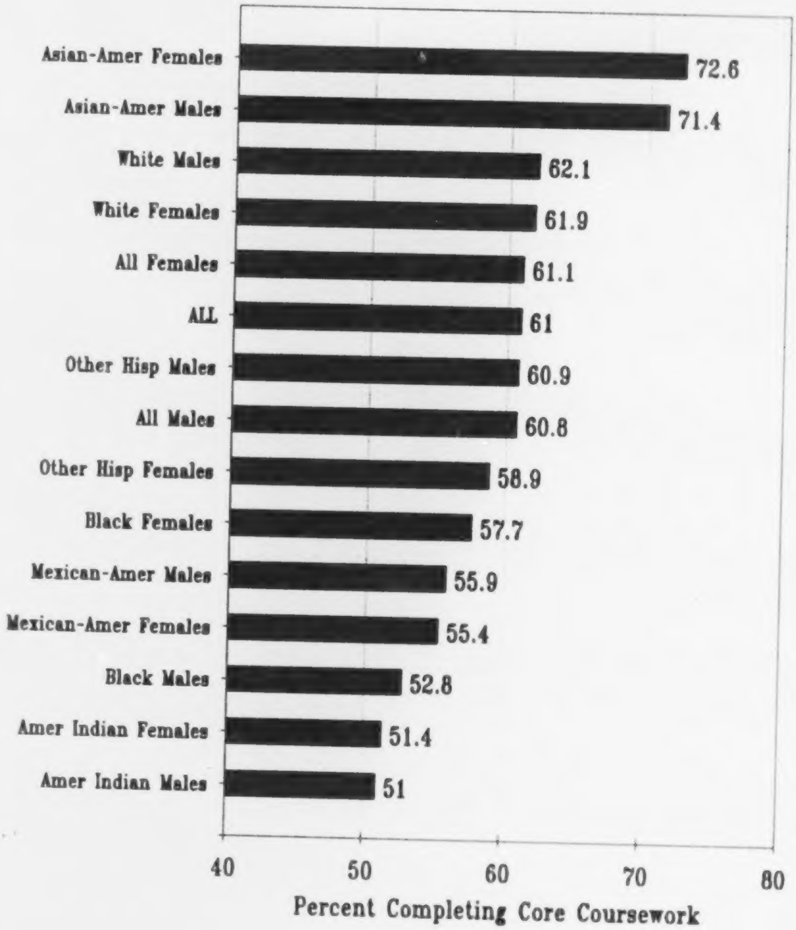


College Core Coursework Completion Rate by Gender and Race/Ethnicity 1997

> *in effect, been committing an act of unthinkable, unilateral educational disarmament.*
>
> *Our society and its educational institutions seem to have lost sight of the basic purposes of schooling, and of the high expectations and disciplined effort needed to attain them ...*

The findings of the Commission began with those regarding curriculum:

> *By content we mean the very "stuff" of education, the curriculum. Because of our concern about the curriculum, the Commission examined patterns of courses high school students took in 1964-69 compared to the course pattern in 1976-81. On the basis of these analyses we conclude:*
>
> - *Secondary school curricula have become homogenized, diluted, and diffused to the point that they no longer have a central purpose. In effect, we have a cafeteria style curriculum in which the appetizers and deserts can easily be mistaken for the main courses. Students have migrated from vocational and college preparatory programs to "general track" courses in large numbers. The proportion of students taking a general program of study has increased from 12 percent in 1964 to 42 percent in 1979.*

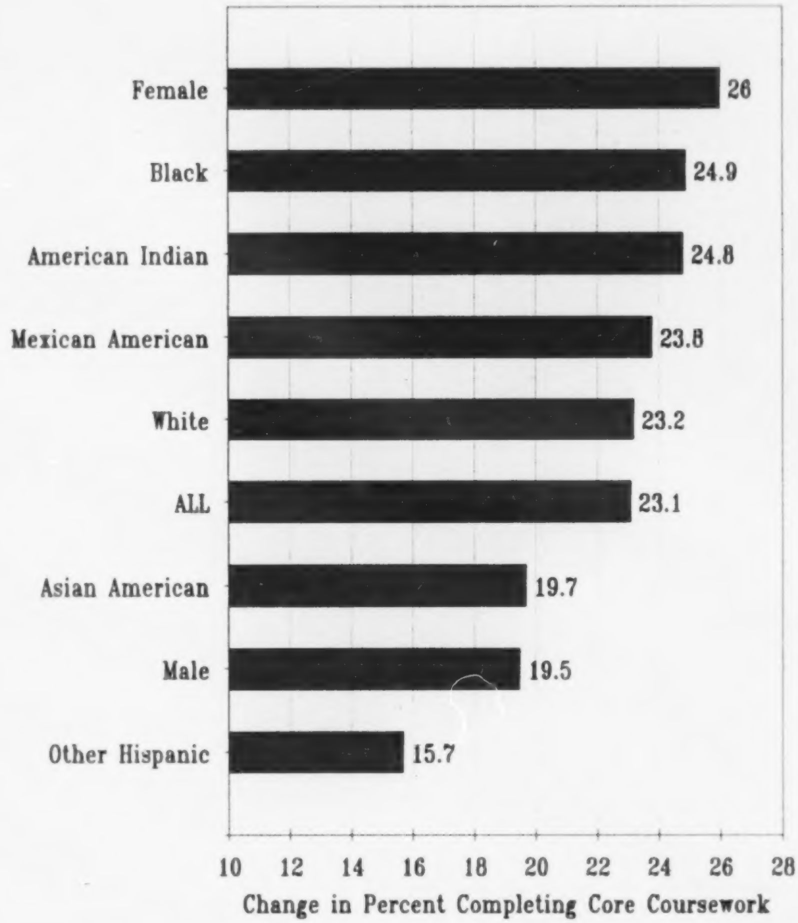
This finding, in particular, led directly to the Commission's first (of five) recommendations, quoted on page 1 of this issue of **OPPORTUNITY**. By graduation, high school students should have taken 4 years of English, 3 years of mathematics, 3 years of science, 3 years of social studies, and one-half year of computer science. Those going on to college should also have completed 2 years of a foreign language.

> *Whatever the student's educational or work objectives, knowledge in the New Basics is the foundation of success for the after-school years and, therefore, forms the core of the modern curriculum. A high level of shared education in these Basics, together with work in the fine and performing arts and foreign languages, constitutes the mind and spirit of our culture.*

The Data

In response to this 1983 challenge, several major data collectors began reporting information on the course taking patterns of American high school students, particularly by the time they had graduated from high school. We examine two here: ACT test-takers, and college freshmen from the national survey of American College Freshmen conducted by UCLA.

Since 1987 ACT has been reporting



Change in Percent of ACT-Tested High School Seniors That Completed College Core Coursework Between 1987 and 1997

course taking patterns of college-bound high school seniors who have taken the ACT Assessment. ACT reports summary data for those who have and for those who have not completed the "College Core" coursework by the time they leave high school. This core consists of 4 years of English, 3 years of math, 3 years of science and 3 years of social studies--neatly coinciding with the four components of the ACT Assessment. ACT's college core does not include high school course-taking in computer science or foreign language which are not included in the ACT Assessment.

Since 1983 the annual survey of American College Freshmen has asked first-time, full-time college freshmen about their high school courses. These results were most recently reported for the 1996 college freshman class. This Survey reports the proportion of freshmen that have met or exceeded years of high school study in the following areas: 4 years of English, 3 years of mathematics, 2 years of foreign language, 2 years of physical science, 2 years of biological science, 1 year of history or American government, 1/2 year of computer science and 1 year of art and/or music.

In both the ACT and UCLA reports, data are available for different demographic breakdowns of the population. ACT has for several years prepared special tabulations for **OPPORTUNITY** on request, that permit examination of data by gender, race/ethnicity and family income. We have included summaries from these special requests in tables in this report.

Core Coursework Completion

Like the federal transcript studies, the ACT data on college core coursework completion has shown substantial growth since the **Nation at Risk** report appeared in 1983. As shown in the chart on page 1 of this issue of **OPPORTUNITY**, between 1987 and 1997 the proportion of ACT-tested college-bound high school seniors that completed the College Core curriculum increased from 37.9 to 61 percent.

Moreover, in sheer numbers, these gains are just as impressive. The number of college-bound high school seniors completing the College Core curriculum increased from 284,000 in 1987 to 566,000 in 1997. During this same period the number not completing this curriculum decreased from 465,000 to 362,000.

These shifts are further magnified by the increasing proportion of high school graduates and college freshmen taking the ACT Assessment over this period. Between 1987 and 1995 the proportion of high school graduates taking the ACT increased from 29 to 36 percent, while the number of college freshmen that took the ACT increased from 52 to 59 percent. Quite likely, the ACT is being taken by more students who would have been least likely to take a college preparatory curriculum in the past.

While this proportion has increased every year, the rate of growth has clearly slowed, particularly between 1995 and 1997. Between 1987 and 1988, the proportion of ACT-tested high school seniors who completed the College Core curriculum increased by 4.7 percent. But between 1996 and 1997 the increase had dropped to just 0.6 percent. Apparently the educational reform initiated in 1983 is losing its early momentum. And, unfortunately, there is still far to go.

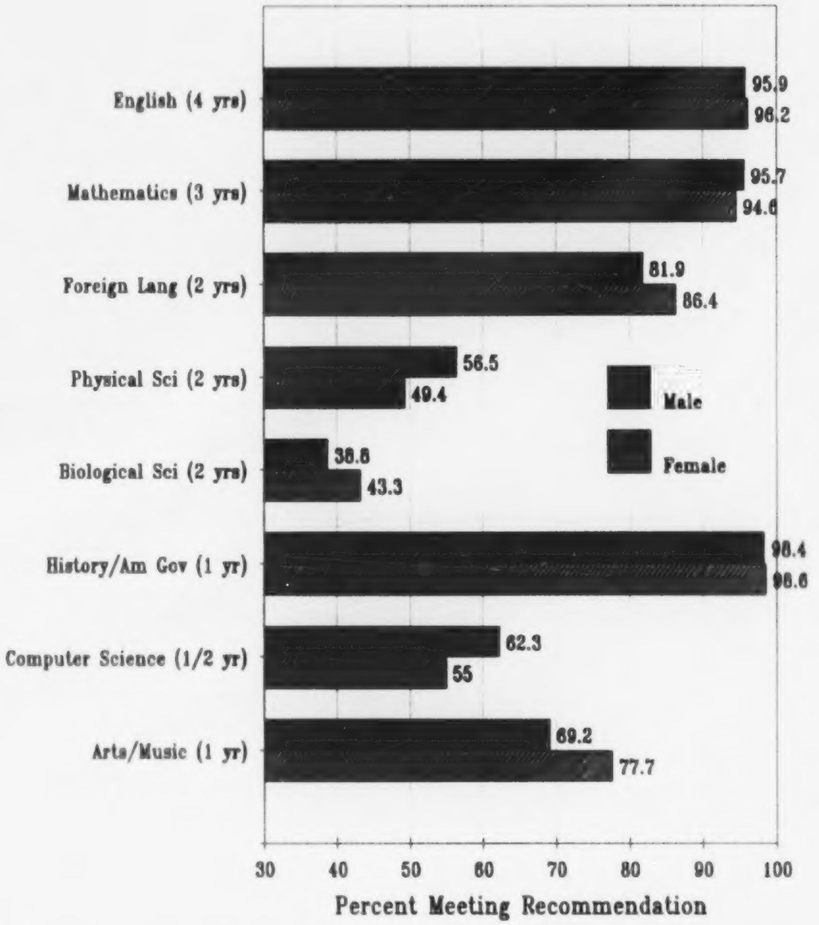
The gain between 1987 and 1997 in the proportion of seniors completing the College Core curriculum was 23.1 percent. But, to be expected, this gain was distributed unevenly across different demographic groups, as shown in the chart on page 4. For example, the proportion of females completing the College Core increased by 26 percent, but only 19.5 percent for males. (This is consistent with data previously reported here on the educational progress of females, and relative lack thereof among males.)

Among the racial/ethnic groups, Blacks and American Indians made the most progress between 1987 and 1997. Both increased their proportions completing the College Core by just under 25 percent. Mexican Americans and whites were close behind. The groups making the smallest gains were other Hispanics (Cubans, Puerto Ricans, etc.) and Asian Americans.

Course-Taking Patterns

Here we switch data bases (temporarily) to examine any changes in the courses students have taken in high school since **A Nation at Risk** appeared in 1983. Here we examine data on high school course-taking as reported by college freshmen from the annual survey of **American College Freshmen** by UCLA. In particular we are interested in the courses taken in English, mathematics, social studies, science, computer science and foreign language. The UCLA data come close to fitting the original prescription. It will be obvious where they do not.

College Freshmen Meeting or Exceeding
Recommended Years of High School Study by Gender
1996



The chart on this page shows the proportion of college freshmen by gender meeting or exceeding certain specified years of study in particular courses over the years between 1983 and 1996. In 1996 nearly all college freshmen--about 95 percent or better--had completed the recommended 4 years of English and 3 years of mathematics.

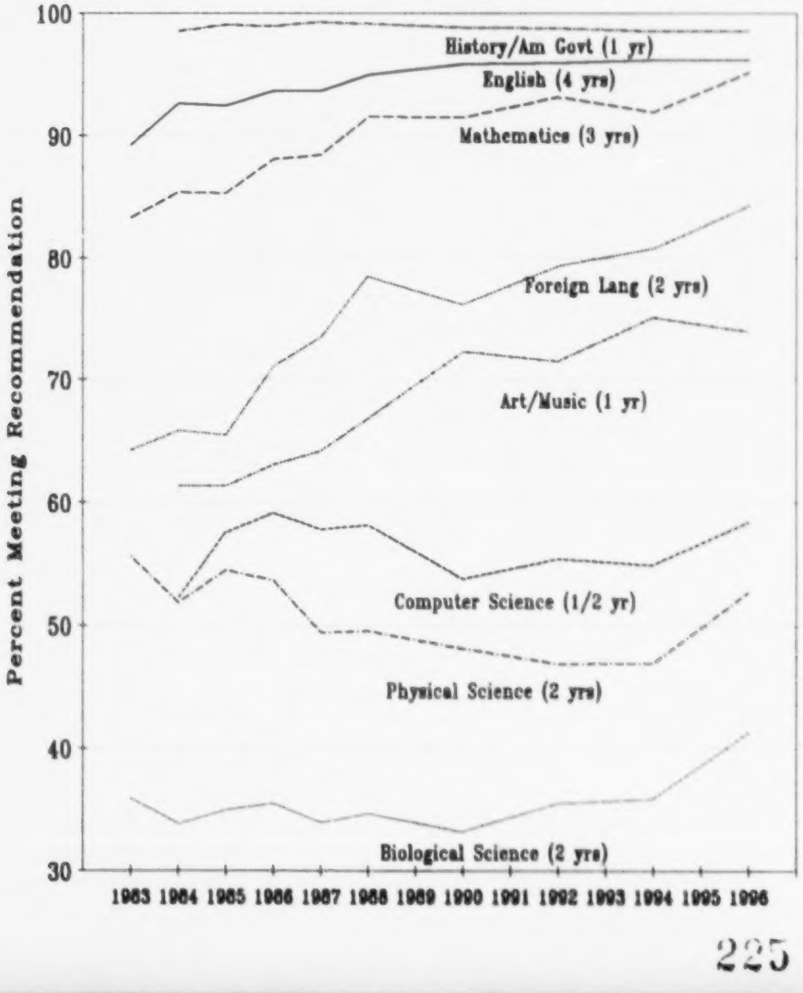
After English and math, however, smaller proportions of college freshmen reported that they had completed the recommended years of study. In foreign languages, 82 percent of males and 86 percent of females reported that they had completed 2 years in high school. In computer science, 62 percent of the males and 55 percent of the females reported that they had completed the one-half year recommended.

The UCLA data do not lend themselves to determining student course-taking patterns regarding the 3 year social studies recommendation or the 3 years of science recommendation. Clearly nearly all freshmen had taken at least 1 year of history or American government. But other reported data--are more ambiguous. The proportions taking 2 years of physical science and 2 years of biological science cannot be added because the percentages undoubtedly overlap--some students may have taken both 2 years of physical science and 2 years of biological science, but we do not know from the published data how much overlap this represents.

What the UCLA data do lend themselves to is examining changes in high school course-taking patterns after **A Nation at Risk** appeared in 1983. Since the same questions have been asked regularly, we examine here changes between 1983 and 1996.

The results show many large gains, and a few small losses, in the high school coursework of college freshmen. With respect to the New Basics Curriculum, the largest gains have been in the proportion of students having taken at least 2 years of a foreign language in high school. Other gains have occurred in mathematics, English and computer science.

College Freshmen Having Met or Exceeded Recommended Years of High School Study 1983 to 1996



The smallest gains appear in science, although the UCLA data do not lend themselves to direct comparison with the New Basics Curriculum recommendation of 3 years of science. While the proportion of college freshmen reporting that they took 2 years of physical science in high school declined (from 55.6 to 52.6 percent) between 1983 and 1996, the proportion reporting that they took 2 years of biological science increased (from 35.9 to 41.3 percent) during the same period.

By gender, males made their largest gain in foreign language, from about 62 to about 82 percent between 1984 and 1996. Females had their largest gain in mathematics, from about 83 to about 95 percent, followed by computer science, from about 47 to 55 percent.

The historic gender gaps in academic subject area generally closed between 1983 and 1996. In areas of mathematics, physical science and computer science, where boys were more likely than girls to have taken at least the minimum recommended curriculum, the change in the proportion of girls reporting that they had completed the recommended curriculum increased more than did the proportion for boys.

	Gap	
	1984	1996
Math	4.6%	1.1%
Phy Sci	11.0%	7.1%
Comp Sci	10.5%	7.3%

Similarly, in the areas of English, foreign languages and arts/music, where girls had taken more coursework, the gaps closed between 1984 and 1996:

	Gap	
	1984	1996
English	1.0%	0.3%
Foreign Lang	7.5%	4.5%
Art/Music	10.5%	8.5%

Only in the areas of biological science and history/American government were the changes trivial.

ACT Assessment

The ACT Assessment is a widely used college admissions exam whose content neatly dovetails with the New Basics Curriculum recommendations (except for foreign language and computer science curricular recommendations) of the National Commission on Excellence in Education. The ACT Assessment consists of four tests, on English, mathematics, social studies and science. The means of these four tests is the ACT Composite score, which can range up to 36. In 1997 the mean ACT composite score for the 959,301 college bound high school seniors who took the ACT was 21.0.

For the last decade, ACT has reported national average ACT Composite scores separately for those who have completed the College Core curriculum, and those who have not completed this coursework. ACT's College Core consists of 4 years of English, 3 years of mathematics, 3 years of social studies and 3 years of science. In 1997, the mean ACT composite score was 22.1 for those who had completed the College Core curriculum, and 19.3 for those who did not complete it.

ACT has prepared a special tabulation for **OPPORTUNITY**--with special thanks to Dr. James Maxey and David Shawver--that permits us to examine both performance on the ACT Assessment and College Core course-taking patterns for several important demographic groupings of the population. These demographic groups include gender, race/ethnicity, and family income's interaction with gender and race/ethnicity. These data are available for six of the last ten years.

The results are clear an unequivocal.

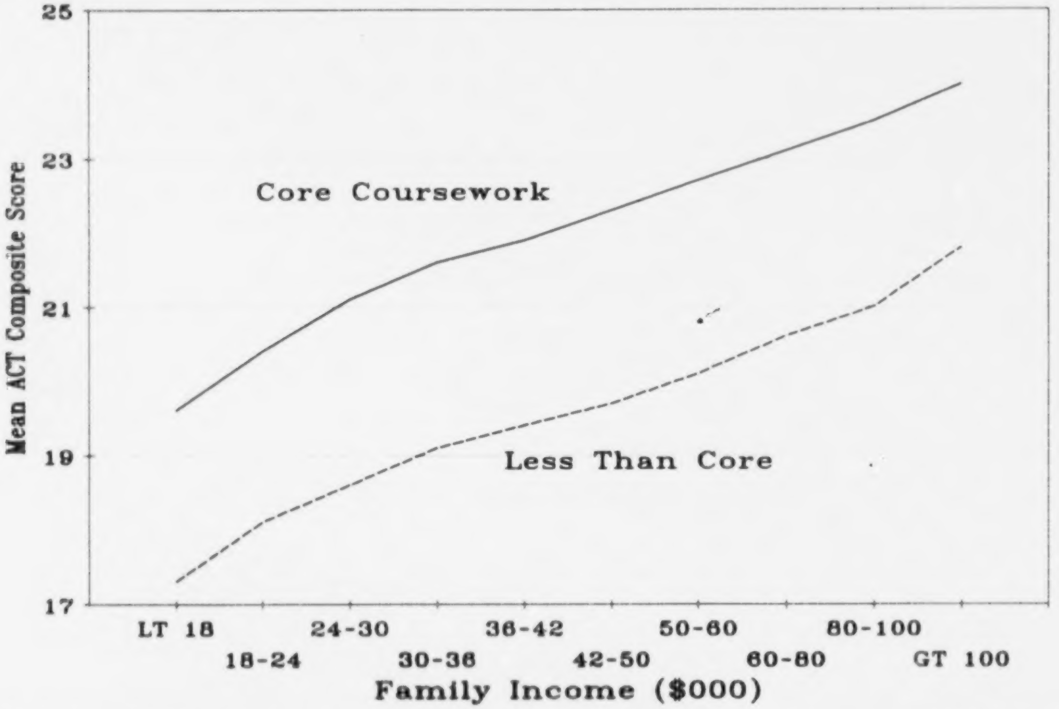
First and most important, for both males and females, for each racial/ethnic group, and at every level of family income, ACT-tested college-

TABLE 1
ACT Composite Scores and College Preparatory Core Course Completion for All College-Bound High School Seniors
1987-1997

Estimated Family Income	1997 ACT Mean Composite Score			College Prep Core Course Completers					
	All[1]	Core	LT Core	1987	1989	1990	1993	1995	1997
0-$5,999	↑	↑	↑	27.4%	34.0%	35.7%	41.2%	45.0%	↑
$6,000-11,999	18.5	19.6	17.3	30.3	38.3	39.9	44.9	49.8	51.0%
$12,000-17,999	↓	↓	↓	32.7	40.1	42.2	47.9	52.4	↓
$18,000-23,999	19.4	20.4	18.1	35.1	42.2	44.6	50.0	54.5	54.3
$24,000-29,999	20.1	21.1	18.6	36.4	44.3	46.2	52.0	56.3	57.1
$30,000-35,999	20.6	21.6	19.1	38.2	45.8	48.0	53.8	58.0	58.6
$36,000-41,999	20.9	21.9	19.4	40.1	47.5	49.4	54.7	59.3	60.1
$42,000-49,999	21.3	22.3	19.7	42.6	50.1	52.2	57.4	61.0	61.8
$50,000-59,999	21.8	22.7	20.1	44.0	52.1	54.1	59.7	63.2	64.3
$60,000-79,999	22.3	23.1	20.6	↑	↑	↑	↑	↑	66.9
$80,000-99,999	22.7	23.5	21.0	47.2	55.8	58.4	64.7	68.2	70.2
$100,000 & over	23.4	24.0	21.8	↓	↓	↓	↓	↓	72.5
TOTAL	21.0	22.1	19.3	37.9%	46.1%	48.4%	54.8%	59.4%	61.0%
Number:									
1997	959,301	566,141	361,947						
1995	945,369	529,146	360,925						
1993	875,603	453,064	374,256						
1990	817,096	370,379	394,540						
1989	855,309	380,576	445,236						
1987	777,508	283,562	464,760						

[1] Includes those for whom core course work could not be determined.

Mean ACT Composite Scores by Family Income for College Core and Non-core Completers 1997



bound high school seniors who completed the College Core curriculum had higher mean ACT Composite scores than did students who did not complete the College Core curriculum in high school. The average difference was 2.8 points.

- The difference was somewhat greater for males (3.1) than for females (2.6).
- The difference was somewhat greater for whites and American Indians (2.8) than it was for blacks (1.9).
- The difference was somewhat greater for students from families with incomes between $42,000 to $60,000 (2.6) than it was for both those from lowest family income, below $24,000 per year (2.3), or for those from highest family incomes, above $100,000 (2.2).

But these ACT data tell other important stories as well. For example, in 1997 (as in each prior year) the proportion of college-bound high school seniors that completed the College Core Curriculum increased directly with family income. For those from families with incomes below $18,000 per year, 51 percent completed the College Core. For those from families with incomes of more than $100,000 per year, the percentage was 72.5 percent. Between these extremes, the relationship was nearly linear.

The above finding applies to males, females, blacks, American Indians, whites, Asian-Americans, Mexican-Americans and other Hispanics equally. This finding also applies to three other groups: unreported race/ethnicity, other race/ethnicity, multiracial and "prefer not to respond", which are not reported separately in the following tables.

Summary and Conclusions

There can be no doubt that the 1983 report **A Nation at Risk** prepared by the National Commission on Excellence in Education started an educational reform process with widespread and persistent effects. Those effects are reflected in the great changes in course-taking patterns of American high school students between 1983 and 1997. These changes followed directly from the Commission's recommendations for the New Basics Curriculum. By every available demographic grouping--gender, race/ethnicity and family income--students have responded by taking high school courses prescribed by the Commission at increasing rates since 1983.

In 1983 the Commission was profoundly troubled by the deteriorating and/or inferior

TABLE 2
ACT Composite Scores and College Preparatory Core Course Completion for Male College-Bound High School Seniors
1987-1997

Estimated Family Income	1997 ACT Mean Composite Score			College Prep Core Course Completers				
	All[1]	Core	LT Core	1987	1990	1993	1995	1997
0-$5,999	↑	↑	↑	30.5%	38.4%	41.7%	45.6%	↑
$6,000-11,999	18.6	19.9	17.3	33.3	41.6	45.0	49.6	50.3%
$12,000-17,999	↓	↓	↓	35.6	44.3	48.7	51.8	↓
$18,000-23,999	19.4	20.7	18.0	38.3	46.6	50.4	54.2	53.9
$24,000-29,999	20.2	21.4	18.6	39.6	48.4	52.9	56.1	56.5
$30,000-35,999	20.7	21.9	19.1	41.5	50.2	54.7	58.0	57.9
$36,000-41,999	21.0	22.2	19.3	43.1	51.9	55.6	59.1	59.2
$42,000-49,999	21.4	22.5	19.7	46.0	54.1	58.2	60.9	61.4
$50,000-59,999	21.9	22.9	20.0	47.8	55.9	60.4	63.1	63.7
$60,000-80,999	22.4	23.3	20.5	↑	↑	↑	↑	66.8
$80,000-99,999	22.8	23.6	20.9	50.0	60.1	65.3	67.9	70.0
$100,000 & over	23.4	24.1	21.6	↓	↓	↓	↓	72.0
TOTAL	21.1	22.4	19.3	41.3%	50.9%	55.9%	59.6%	60.8%
Number:								
1997	419,049	244,304	157,337					
1995	416,159	231,182	156,397					
1993	393,707	205,844	162,625					
1990	373,310	175,840	169,671					
1987	356,695	140,352	199,505					

[1] Includes those for whom core coursework could not be determined.

TABLE 3
ACT Composite Scores and College Preparatory Core Course Completion for Female College-Bound High School Seniors
1987-1997

Estimated Family Income	1997 ACT Mean Composite Score			College Prep Core Course Completers				
	All[1]	Core	LT Core	1987	1990	1993	1995	1997
0-$5,999	↑	↑	↑	25.7%	34.0%	40.8%	44.7%	↑
$6,000-11,999	18.4	19.4	17.3	28.4	38.8	44.9	49.9	51.4%
$12,000-17,999	↓	↓	↓	30.7	40.6	47.3	52.7	↓
$18,000-23,999	19.3	20.3	18.1	32.5	42.9	49.6	54.7	54.5
$24,000-29,999	20.0	20.9	18.7	33.6	44.3	51.2	56.4	57.5
$30,000-35,999	20.5	21.4	19.2	35.4	46.1	53.0	58.0	59.1
$36,000-41,999	20.8	21.7	19.4	37.3	47.2	54.0	59.5	60.8
$42,000-49,999	21.2	22.1	19.7	39.4	50.4	56.6	61.1	62.1
$50,000-59,999	21.7	22.5	20.2	42.0	52.5	59.0	63.3	64.8
$60,000-79,999	22.2	23.0	20.7	↑	↑	↑	↑	67.1
$80,000-99,999	22.7	23.4	21.2	44.5	56.6	64.1	68.4	70.3
$100,000 & over	23.4	23.9	22.0	↓	↓	↓	↓	73.1
TOTAL	20.8	21.9	19.3	35.1%	46.4%	53.9%	59.3%	61.1%
Number:								
1997	540,252	321,837	204,610					
1995	529,210	297,964	204,528					
1993	481,896	247,220	211,631					
1990	443,786	194,539	224,869					
1987	420,729	143,205	265,235					

[1] Includes those for whom core coursework could not be determined.

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TABLE 4
ACT Composite Scores and College Preparatory Core Course Completion for African American/Black College-Bound High School Seniors
1987-1997

Estimated Family Income	1997 ACT Mean Composite Score			College Prep Core Course Completers				
	All[1]	Core	LT Core	1987	1990	1993	1995	1997
0-$5,999	↑	↑	↑	25.4%	35.3%	41.1%	45.1%	↑
$6,000-11,999	16.1	16.9	15.3	28.5	39.6	44.7	50.7	50.7%
$12,000-17,999	↓	↓	↓	30.2	41.4	47.7	53.0	↓
$18,000-23,999	16.5	17.3	15.6	31.8	42.2	49.1	55.5	56.4
$24,000-29,999	16.9	17.7	15.9	32.8	44.7	50.3	55.6	56.4
$30,000-35,999	17.4	18.1	16.3	34.2	46.7	53.1	57.0	58.0
$36,000-41,999	17.6	18.4	16.4	34.9	48.2	53.2	59.9	59.0
$42,000-49,999	17.9	18.7	16.7	39.0	49.4	56.1	61.2	60.7
$50,000-59,999	18.4	19.0	17.2	38.8	51.4	57.6	62.4	62.6
$60,000-79,999	18.8	19.7	17.4	↑	↑	↑	↑	63.3
$80,000-99,999	19.3	20.0	17.7	43.3	52.7	60.4	64.6	66.2
$100,000 & over	19.8	20.6	18.0	↓	↓	↓	↓	67.0
TOTAL	17.1	17.9	16.0	30.9%	42.6%	48.9%	54.5%	55.8%
Number:								
1997	90,617	50,100	39,696					
1995	89,155	48,097	40,099					
1993	80,401	38,893	40,620					
1990	71,197	29,814	40,127					
1987	61,772	18,789	42,109					

[1] Includes those for whom core coursework could not be determined.

TABLE 5
ACT Composite Scores and College Preparatory Core Course Completion for American Indian/Alaskan Native College-Bound High School Seniors
1987-1997

Estimated Family Income	1997 ACT Mean Composite Score			College Prep Core Course Completers				
	All[1]	Core	LT Core	1987	1990	1993	1995	1997
0-$5,999	↑	↑	↑	16.8%	26.2%	31.9%	36.0%	↑
$6,000-11,999	17.4	19.0	16.5	20.2	29.7	37.0	38.7	41.8%
$12,000-17,999	↓	↓	↓	36.0	35.8	43.7	42.7	↓
$18,000-23,999	18.0	19.4	16.8	27.4	40.5	44.7	46.7	49.1
$24,000-29,999	18.8	20.2	17.5	28.7	39.5	47.1	51.6	49.4
$30,000-35,999	19.1	20.4	17.9	28.2	39.4	50.0	53.0	52.2
$36,000-41,999	19.5	20.7	18.2	32.2	41.2	49.5	54.9	55.2
$42,000-49,999	19.7	20.9	18.2	36.8	46.4	50.7	54.4	55.2
$50,000-59,999	20.1	21.1	18.7	32.4	46.5	55.5	58.3	58.5
$60,000-79,999	20.7	22.0	19.0	↑	↑	↑	↑	57.7
$80,000-99,999	21.0	22.2	19.6	36.7	49.5	58.0	61.3	55.7
$100,000 & over	21.5	22.6	19.6	↓	↓	↓	↓	65.6
TOTAL	19.0	20.4	17.6	26.4%	37.8%	45.7%	49.5	51.2%
Number:								
1997	11,509	5,685	5,414					
1995	11,361	5,398	5,509					
1993	10,384	4,537	5,390					
1990	9,101	3,163	5,208					
1987	7,359	1,769	4,943					

[1] Includes those for whom core coursework could not be determined.

TABLE 6
ACT Composite Scores and College Preparatory Core Course Completion for White College-Bound High School Seniors
1987-1997

Estimated Family Income	1997 ACT Mean Composite Score			College Prep Core Course Completers				
	All[1]	Core	LT Core	1987	1990	1993	1995	1997
0-$5,999	↑	↑	↑	28.8%	35.1%	40.3%	44.1%	↑
$6,000-11,999	20.1	21.6	18.7	30.8	39.2	43.7	48.5	50.0%
$12,000-17,999	↓	↓	↓	33.0	41.8	47.2	51.4	↓
$18,000-23,999	20.5	21.7	19.1	33.5	44.6	49.6	53.9	53.8
$24,000-29,999	20.9	22.0	19.4	36.7	46.0	51.6	55.8	56.8
$30,000-35,999	21.2	22.3	19.6	38.4	47.8	53.4	57.6	58.2
$36,000-41,999	21.3	22.4	19.8	40.2	49.3	54.5	58.9	59.9
$42,000-49,999	21.6	22.6	20.0	42.7	52.2	57.1	60.8	61.6
$50,000-59,999	22.0	22.9	20.3	44.9	54.1	59.5	62.9	64.2
$60,000-79,999	22.5	23.3	20.8	↑	↑	↑	↑	67.0
$80,000-99,999	22.9	23.6	21.2	47.2	58.3	64.6	68.1	70.2
$100,000 & over	23.4	24.0	21.9	↓	↓	↓	↓	72.7
TOTAL	21.7	22.8	20.0	38.8%	49.1%	55.5%	60.2%	62.0%
Number:								
1997	663,878	408,851	250,763					
1995	650,664	388,508	257,159					
1993	625,242	342,884	275,294					
1990	605,361	290,929	301,253					
1987	610,780	234,118	369,995					

[1] Includes those for whom core course work could not be determined.

TABLE 7
ACT Composite Scores and College Preparatory Core Course Completion for Asian-American/Pacific Islander College-Bound High School Seniors
1987-1997

Estimated Family Income	1997 ACT Mean Composite Score			College Prep Core Course Completers				
	All[1]	Core	LT Core	1987	1990	1993	1995	1997
0-$5,999	↑	↑	↑	41.6%	54.1%	56.1%	57.6%	↑
$6,000-11,999	18.8	19.6	17.3	46.1	59.4	62.6	63.4	65.3%
$12,000-17,999	↓	↓	↓	49.2	60.9	64.0	65.8	↓
$18,000-23,999	19.8	20.6	18.2	50.8	61.9	65.3	67.2	66.5
$24,000-29,999	20.6	21.2	19.0	51.0	63.4	68.0	71.0	71.2
$30,000-35,999	21.1	21.9	19.5	55.4	62.8	68.7	71.8	71.8
$36,000-41,999	21.7	22.3	20.1	56.5	65.1	72.2	71.3	73.2
$42,000-49,999	22.3	23.0	20.5	55.7	66.7	71.1	71.0	72.1
$50,000-59,999	23.0	23.5	21.3	58.5	66.5	72.4	75.3	76.0
$60,000-79,999	23.8	24.3	22.0	↑	↑	↑	↑	76.6
$80,000-99,999	24.2	24.7	22.5	59.9	70.5	74.0	78.1	78.5
$100,000 & over	25.4	25.8	24.1	↓	↓	↓	↓	78.7
TOTAL	21.7	22.5	19.8	52.4%	63.6%	68.5%	70.7%	72.1%
Number:								
1997	28,542	20,201	7,834					
1995	27,784	19,237	7,989					
1993	24,754	16,600	7,649					
1990	19,081	11,734	6,714					
1987	13,885	7,070	6,411					

[1] Includes those for whom core coursework could not be determined.

TABLE 8
ACT Composite Scores and College Preparatory Core Course Completion for Mexican-American/Chicano College-Bound High School Seniors
1987-1997

Estimated Family Income	1997 ACT Mean Composite Score			College Prep Core Course Completers				
	All[1]	Core	LT Core	1987	1990	1993	1995	1997
0-$5,999	↑	↑	↑	22.8%	35.6%	38.9%	44.8%	↑
$6,000-11,999	17.4	18.6	16.2	28.6	40.0	46.8	51.5	51.1%
$12,000-17,999	↓	↓	↓	31.2	42.3	48.0	52.6	↓
$18,000-23,999	18.0	19.1	16.8	31.0	43.2	50.7	53.2	50.9
$24,000-29,999	18.4	19.4	17.3	32.6	45.4	49.2	55.6	54.7
$30,000-35,999	19.0	19.9	17.8	35.2	49.1	52.0	58.7	56.8
$36,000-41,999	19.1	19.9	18.0	38.0	47.8	52.1	57.3	57.8
$42,000-49,999	19.7	20.6	18.3	41.0	50.9	56.7	58.3	59.1
$50,000-59,999	20.1	21.0	18.7	39.8	50.6	57.1	62.2	60.3
$60,000-79,999	20.9	21.9	19.1	↑	↑	↑	↑	65.2
$80,000-99,999	21.2	21.9	19.6	42.3	55.2	62.4	66.1	68.1
$100,000 & over	21.7	22.7	19.7	↓	↓	↓	↓	66.9
TOTAL	18.8	19.9	17.4	31.8%	44.2%	50.0%	55.4%	55.6%
Number:								
1997	21,511	11,875	9475					
1995	24,431	13,435	10,801					
1993	27,713	13,764	13,753					
1990	22,806	9,770	12,349					
1987	17,451	5,407	11,614					

[1]Includes those for whom core coursework could not be determined.

TABLE 9
ACT Composite Scores and College Preparatory Core Course Completion for Puerto Rican, Cuban, Other Hispanic College-Bound High School Seniors
1987-1997

Estimated Family Income	1997 ACT Mean Composite Score			College Prep Core Course Completers				
	All[1]	Core	LT Core	1987	1990	1993	1995	1995
0-$5,999	↑	↑	↑	28.6%	35.8%	38.9%	42.9%	↑
$6,000-11,999	17.2	18.2	16.1	37.9	44.1	48.7	49.9	52.5%
$12,000-17,999	↓	↓	↓	39.9	49.3	52.6	53.6	↓
$18,000-23,999	17.9	18.9	16.6	42.2	50.5	53.8	56.0	54.5
$24,000-29,999	18.6	19.5	17.2	45.7	51.3	58.2	57.6	60.0
$30,000-35,999	19.2	20.2	17.7	50.6	56.3	60.6	61.0	60.9
$36,000-41,999	19.5	20.6	17.7	51.1	57.6	60.1	62.0	61.3
$42,000-49,999	20.1	20.8	18.7	50.4	56.1	65.4	63.2	64.2
$50,000-59,999	20.4	21.3	18.8	56.4	60.8	66.0	66.1	64.7
$60,000-79,999	21.1	21.9	19.4	↑	↑	↑	↑	66.6
$80,000-99,999	21.7	22.3	20.2	56.5	64.4	70.1	71.5	72.1
$100,000 & over	22.5	23.1	20.7	↓	↓	↓	↓	73.9
TOTAL	19.0	20.1	17.4	44.0%	51.8%	57.0%	58.1%	59.7%
Number:								
1997	26,841	15,693	10,615					
1995	24,054	13,585	9,812					
1993	13,894	7,693	5,799					
1990	10,669	5,250	4,886					
1987	7,566	3,149	4,003					

[1]Includes those for whom core coursework could not be determined.

performance of American high school students based on both international comparisons and comparisons to performance of earlier generations of high school students. Their findings appeared to be explained by the weakening of high school curricula:

- *Secondary school curricula have been homogenized, diluted, and diffused to the point that they no longer have a central purpose. In effect, we have a cafeteria style curriculum in which the appetizers and deserts can easily be mistaken for the main courses. Students have migrated from vocational and college preparatory programs to 'general track' courses in large numbers. The proportion of students taking a general program of study has increased from 12 percent in 1964 to 42 percent in 1979.*
- *This curricular smorgasbord, combined with extensive student choice, explains a great deal about where we find ourselves today. We offer intermediate algebra, but only 31 percent of our recent high school graduates complete it; we offer French I, but only 13 percent complete it; and we offer geography, but only 16 percent complete it. Calculus is available in schools enrolling about 60 percent of all students, but only 6 percent of all students complete it.*
- *Twenty-five percent of the credits earned by general track high school students are in physical and health education, work experience outside the school, remedial English and mathematics, and personal service and development courses, such as training for adulthood and marriage.*

Out of these findings and other efforts of the Commission grew the recommendation for the New Basics Curriculum.

By 1993 just six states had adopted the New Basics curricular requirements in English, mathematics, social studies and science for all high school graduates in their states. These states were: **Florida, Georgia, Hawaii, Louisiana, Pennsylvania** and the **District of Columbia**.

Thirty-nine states required 4 years if English for all high school graduates, 27 required 3 years of social studies, 15 required 3 years of mathematics and just 7 states required 3 years of science for all high school graduates. Some states had no state-level graduation requirements (**Colorado, Massachusetts**) and many other states had higher graduation requirements for college preparatory curricula than for standard programs. But most states simply required for standard high school graduation fewer years of study in the New Basics Curriculum than what had been recommended by the Commission a decade earlier.

While the response from most states has deviated (and usually fallen short) from the Commission's New Basics recommendations, there has been a very large growth in the proportion of high school graduates taking the course work that met the recommendation. In the ACT data, for college-bound high school seniors, the proportion taking ACT's similar Core Courses increased from 38 to 61 percent between 1987 and 1997. Although the growth momentum is clearly slowing in the mid-1990s compared to the rate of growth in the late 1980s, growth does continue.

Moreover, the growth in the proportion of college-bound high school seniors completing ACT's College Core Curriculum has been widespread affecting subpopulations grouped by gender, race/ethnicity and family income. This growth has been somewhat uneven, with females increasing their College Core course work faster than males; blacks, American Indian and Mexican-Americans increasing their College Core course work at greater rates than Asian-Americans and other Hispanics.

Perhaps most troubling in these data is the persistent effect of family income on college course work completion, with its evident implications for performance on the ACT Assessment used for college admissions. For males and females, as well as for those of any race or ethnic group, the proportion of college-bound high school seniors completing ACT's College Core courses is lowest for those from lowest family income and highest for those from highest family income. This carries over into performance on the ACT Assessment as well.

But even in this problematic area, the contribution of course-taking to performance on the ACT Assessment is unmistakable. Completing the College Core helps close the gap when it comes to the ACT Composite test score.

Finally, the contribution of public policy making to educational preparation of secondary students for college stands out in these data. Clear public policy has made a very large difference in the courses taken by college bound high school seniors (who become college freshmen shortly thereafter). The data are striking. Students (and the educational systems within which they study) do respond to reasoned, researched, compelling arguments.

But the momentum for educational reform appears to be losing steam. The 14 years since release of **A Nation at Risk** has seen waning progress. But the social, economic and cultural needs for greater levels of educational performance and attainment are at least as urgent in 1997 as they were in 1983. The country responded once. Perhaps it is time to renew the call for educational reform and marshall the commitment.

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The emphasis . . . *. . . is on Education*

Education and Training Requirements for Job Openings between 1996 and 2006

Between 1996 and 2006 U.S. employment will grow from 132.4 million, to 150.9 million--an increase of 18.6 million jobs. Over this same period, an additional 32 million existing jobs will open up due to net replacements as workers retire or otherwise leave the job market.

What are the educational requirements for the 50.6 million openings that will occur over this decade? Not surprisingly, all job openings will require at least some training. But 31 million jobs will not require postsecondary education. These jobs are the lowest paid jobs in the labor force. They will all require short-term, moderate-term or long-term on-the-job training to perform the duties of the job.

The remaining roughly 20 million new openings will require some form of formal postsecondary education or training. About half of these new openings will require a bachelor's degree.

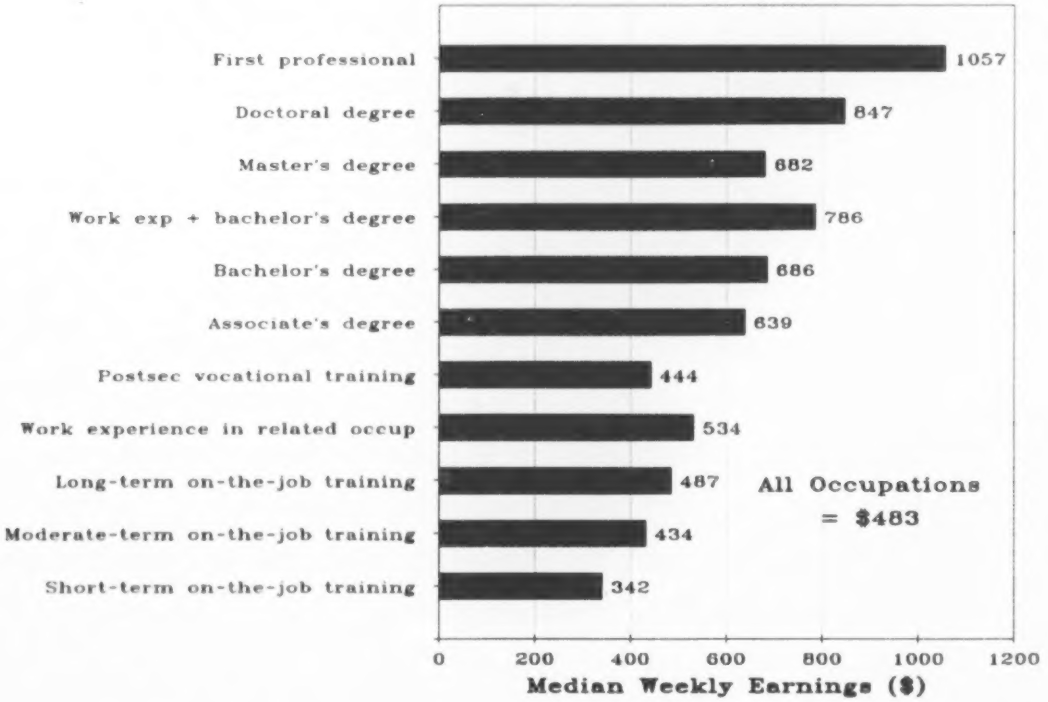
These are some of the findings reported from a recent release of employment projects for the ten-year period from 1996 to 2006. These projections were prepared by the Bureau of Labor Statistics, U.S. Department of Labor. The BLS prepares these projections for studying long-range economic and employment trends, planning education and training programs, and developing career information.

The Data

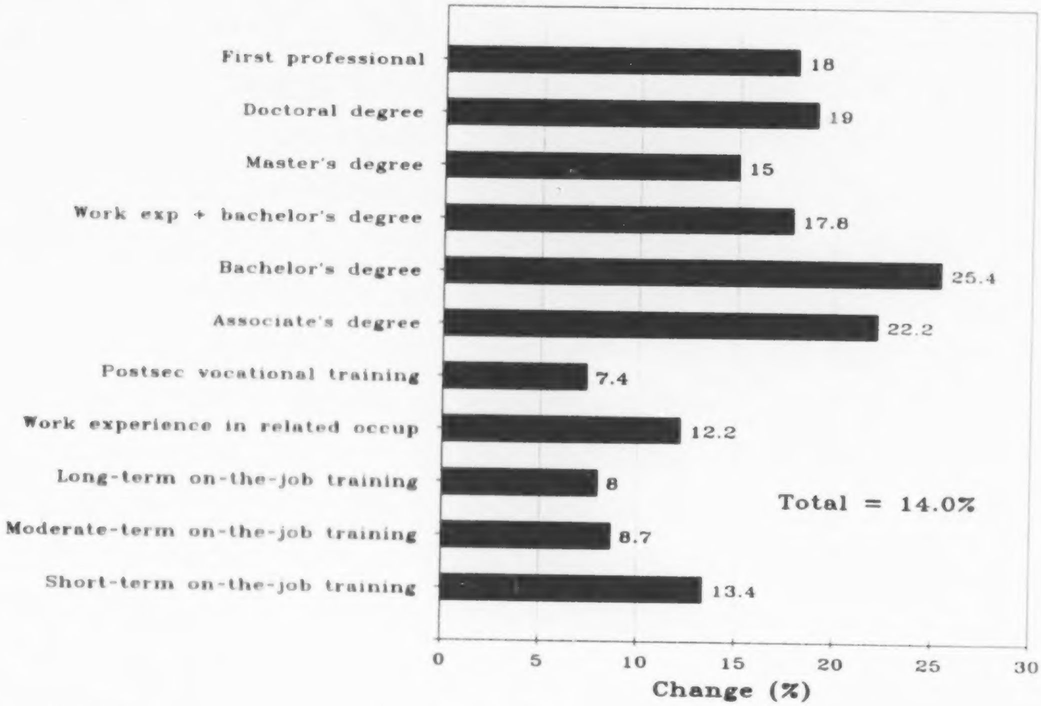
Since the early 1980s, the Bureau of Labor Statistics has periodically developed projections for the labor force, aggregate economic growth, industry employment and occupation employment. These projections were in the ten to fifteen year range. The projections reported here will be next updated in two years.

These projections incorporate demographic information on age, gender and race/ethnicity. Projections

Median Weekly Earnings of Full-Time Workers
by Education and Training Category
1996



Change in Total Job Openings by Education and Training Category 1996 to 2006



are made by major industry division, occupational group, and--key for our purposes here--by education or training requirements.

A summary of these projections is available in a news release from BLS labeled USDL 97-429. This news release is also available on the Internet at:

http://stats.bls.gov/news.release/ecopro.nws.htm

Labor Force Projections

The labor force is projected to increase from 134 million to 149 million between 1996 and 2006. This is an increase of 11 percent, which is below the 14 percent increase that occurred between 1986 and 1996.

- Labor force growth will be grow fasteat in the 45-64 age group--the baby boom generation born after World War II.
- The labor force 25 to 34 years of age is projected to decline by nearly 3 million. This is a reflection in the decline in live births in the late 1960s and early 1970s.
- The white labor force will grow by 7 percent, the black by 14 percent, the Hispanic by 36 percent, and the Asian and other by 41 percent.
- By 2006 the black and Hispanic labor forces will be nearly equal in size.

Employment by Industry

Between 1996 and 2006 employment is projected to increase from 132 to 151 million, or by 19 million.

- Service industries will account for nearly all of this growth. Nearly one out of every two jobs added to the economy between 1996 and 2006 will be in health services, business services, social services, and engineering, management and related services.
- Manufacturing's share of employment will decline from 14 percent in 1996 to 12 percent in 2006. In 1970 it had been over 26 percent, and until the mid-1950s manufacturing had provided about a third of employment.

Education and Training

The Bureau of Labor Statistics' report summarizes data on several aspects of the relationship between education and employment.

First among these is the often-reported relationship between education and income. As shown in the chart on the previous page, median weekly earnings of those with college degrees

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are invariably higher than are earnings for those with different combinations training and work experience, but who lack college educations. For full-time work, persons with more education can earn three times as much for their labors as can less educated and trained workers.

Second, between 1996 and 2006, employment growth will be about 14 percent. But for every employment/training category below the associate degree, employment growth will fall below this level, and for every employment/training category beginning at the associate degree employment growth will be above 14 percent. The greatest growth will be for those with bachelor's and associate degrees from college, both more than 20 percent between 1996 and 2006.

Third, buried in the Bureau of Labor Statistics projections is another important finding. Among those job openings that require less than an associate degree from college, about three-quarters are net replacement openings with the remaining quarter resulting from employment growth. However, among those job openings that require an associate degree or more from college, less than half of the new job openings will be net replacement positions and just over half--about 55 percent--will result from employment growth.

The new job openings that are created by employment (and economic) growth will require the talents and skills of college educated workers. In contrast, the net replacement job openings of existing jobs will be filled primarily by long-term, moderate-term or short-term on-the-job training. This is a clear signal that economic growth is more dependent on college-educated workers than are the jobs in the existing economy.

There are other aspects of these employment projections by the Bureau of Labor Statistics that deserve special note with respect to our concerns for postsecondary education and training opportunities for young people. Foremost among these is the changing demographic profile of the population. The labor market generally will have to adapt to the baby-bust that has moved through the education pipeline. That means fewer younger workers entering the labor pool.

More importantly, these newer and younger workers will look less like the older workers they are replacing. Racially and ethnically they will be much less white and more Asian, Hispanic and black than in the past. If higher education is to meet the economic challenge of preparing fully the next generation of workers--who come from populations not previously well represented in nor served well by higher education--then the educational system must try harder than it has just to produce what it has produced up until now.

* * * * *

Additional information on these 1996-2006 employment projections are available in other BLS publications. The November 1997 issue of the *Monthly Labor Review* contains five articles on the projections. Graphic presentation of these projections appears in the Winter 1997-98 issue of *Occupational Outlook Quarterly*.

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